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The Effects of Perceptual-Motor Training and Music on Perceptual-Motor Development and Behavior of Educable Mentally Retarded Children.

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THE EFFECTS OF PERCEPTUAL-MOTOR TRAINING AND MUSIC ON PERCEPTUAL-MOTOR DEVELOPMENT AND BEHAVIOR OF EDUCABLE MENTALLY RETARDED CHILDREN

A Dissertation

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ABSTRACT

This study was undertaken to determine the effects of perceptual-motor training and music on the development of perceptual-motor skills and behavior of educable mentally retarded children.

The specific purposes of the study were to determine the effects of a sequential and structured perceptual-motor training program and a structured music program on:

1. The development of perceptual-motor skills, as measured by the Purdue Perceptual-Motor Survey.

2. General behavior as observed in classroom activities, personal health habits, physical education participation, and social adjustment.

The method of research selected for the study was the case study technique. Thirty subjects between the ages of nine and twelve years of age who were enrolled in the 1971-72 school year at the Children's Center of Montgomery, Alabama, were studied.

Fifteen subjects made up Group I and participated in combined perceptual-motor and music programs. Fifteen subjects made up Group II and participated in the music program only.

Case studies were written to describe each subject's experiences in the respective programs. Sources of data were:

1. Background information from the subjects' records which contained family and social history, psychological data, medical history, educational history, and other pertinent information.

2. Evaluation of perceptual-motor attributes at the beginning and end of the experimental period using the Purdue Perceptual-Motor Survey.

3. Teacher Rating Scale evaluating each subject's social and emotional behavior in classroom activities, personal health habits, physical education participation, and social development during the fifteen week experimental period.

4. Daily anecdotal records which included daily perceptual-motor and music activities participated in, time involved in each activity, level of achievement, and social behavior for each subject.

Within the limitations of this study the following conclusions were drawn:

1. Combined perceptual-motor and music programs will improve perceptual-motor skills of educable mentally retarded children.

2. Combined perceptual-motor and music programs will develop perceptual-motor skills to a much greater extent than a music program alone.

3. Similar gains were made in social and emotional behavior by subjects in the combined programs and subjects in the music program only. Therefore, it was concluded that structured and

meaningful group activity of various types may improve behavior of educable mentally retarded subjects.

4. Improvement in physical skills appears to enhance an improved self concept.

CHAPTER I

INTRODUCTION

The human organism is a most intricate and fascinating network of systems that must coordinate and function smoothly and quickly in order to meet the rigorous demands of the complex environment with which it is confronted. From the time of conception, the experiences the organism encounters will grossly influence the development of movement patterns and the perceptual and thought processes. Moreover, it is the development of these movement patterns and thought processes that will determine to what degree the individual will adjust, perceive, be accepted by his peers, and succeed in his complex society.[1]

It is obvious then that the organism must be adaptable and flexible. Kephart[2] points out that:

> These adaptable systems can perfect themselves only through practice. The child experiences through looking, feeling, listening, smelling, striking to produce sound, and various other ways. He perfects the sensory-motor process and learns to match sensory data to motor data by manipulating things and relating his own body to things. He builds an adaptive, plastic perceptual-motor process

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[1] Newell C. Kephart, The Slow Learner in the Classroom (Columbus: Charles E. Merrill Publishing Company, 1960), pp. 3-4.

[2] Ibid., p. 13.

> which will allow him to adjust and fit his behavior to the varied demands of the situations in which he will later find himself.

It is further noted by Kephart that unlimited random experimentation is a necessity. The child needs to learn what he can do with his body and its parts. Random experimentation is necessary for the child to learn that a sensory impression is the basis for an appropriate motor response. This experimentation must be designed by the child to aid him in acquiring the experimental data necessary for the organized skills he is building up. The contemporary world demands these foundations of the individual child as no previous civilization has demanded them.[3]

Opportunities for experimentation in the many varied areas and at high levels should be provided for pre-school and primary age children through carefully structured perceptual-motor programs. Early motor responses represent the beginnings of development and learning.

Kephart supports the importance of these programs at an early stage. It is through motor exploration and motor experimentation that the child begins to find out about himself and his world. His motor learnings become the foundation upon which such knowledge is built. Intellectual development is grossly affected by motor activities and mental and physical activities are closely related in early childhood.

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[3] Ibid.

Motor learning is the basis for so-called higher forms of behavior.[4]

Kephart-type activities have been used in several instances to construct developmental perceptual-motor programs. However, doubts have arisen about some of his assumptions and conclusions. While recognizing Kephart's contributions, Cratty and Martin[5] question his major hypothesis that "movement is the basis of the intellect." They conclude that more research concerning his methodologies is called for.

There has been much speculation in the past involving movement as an educational tool. There is a definite need to investigate suppositions such as "Movement is the basis of all learning," and "Movement will aid perceptual-motor development." Learning theorists know that although thinking appears to be inactive, actually small movements of the vocal cords, lips, eyes, and others chain together as we think, remember, and learn. Some theorists have attempted to divide thinking and moving into a true dichotomy; however, later findings have made it very difficult to separate thought and movement as the organism functions.[6]

There is obviously a great need to develop programs that explore

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[4] Ibid., p. 35.

[5] Bryant J. Cratty and Sister Margaret Mary Martin, Perceptual-Motor Efficiency in Children (Philadelphia: Lea and Febiger, 1969), p. 11.

[6] Bryant J. Cratty, Movement Behavior and Motor Learning (Philadelphia: Lea and Febiger, 1968), p. 3.

the value of movement and activity in the remediation of handicaps of the mentally retarded. Julien Stein, the director of programs for the handicapped in the office of the American Association for Health, Physical Education and Recreation, postulates that there is an ever increasing need for research in this area. He stresses the need to investigate the potential of movement and physical activities in order to develop a better understanding of the retarded. He feels that games, sports, rhythms and other kinds of physical activities can be used in the development of sounder, more efficient and effective techniques for the education of the retarded.[7]

Moreover, Stein is only one of many who suggest that rhythms and music should be an integral part of rich sensory experiences in the educational programs of children.

Music reaches retarded children; it gives them a sense of security. Very often music is the first means of communication for the retarded and helps to fulfill their basic needs. Music provides an opportunity for the child to express himself when he may not be aware of any other means of self expression. Music may enhance the social, emotional, and physical development of the retarded child. Well structured, meaningful programs affect the total being of the child.[8]

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[7] Julien U. Stein, "Motor Function and Physical Fitness of the Mentally Retarded: A Critical Review," Rehabilitation Literature, XXIV (August, 1963), 231.

[8] Bernice Carlson and David Gingland, Play Activities for the Retarded Child (New York: Abingdon Press, 1961), pp. 159-162.

With so many unanswered questions involving movement and the intellect, every effort must be made to determine the effect of motor activities on the perceptual and thought processes of the mentally retarded. It is also essential that such programs be developed at the pre-school and primary levels so as to enhance the possibility of early detection of learning problems and increase the child's chances of being provided with the needed educational program so that he might better achieve that ultimate goal of becoming a fully functioning, self sufficient individual.

STATEMENT OF THE PROBLEM

This study was designed to examine the effects of perceptual-motor training and music on the development of perceptual-motor skills and behavior of educable mentally retarded children. Many researchers have indicated that physical education plays an important role in the physical, mental, social, and emotional growth and development of mentally retarded children. Retarded children generally experience major problems in expressing themselves verbally and many have known nothing but failure and frustration in the "normal" and academic worlds. However, in physical education these children find opportunities to express themselves freely without having to depend upon verbal means. Thus, physical education and perceptual-motor programs become vital and take on great meaning in the educational planning for the mentally retarded. Such programs present

opportunities for the retardate to experience a degree of success that he may not experience in any other area.

Early theorists placed emphasis on movement as related to the intellect. Later researchers have contended that there is no true dichotomy between "thinking" and "moving." Other findings support the postulate that movement is basic to thought. Cratty[9] states that, "Movement is a fundamental dimension of human behavior."

PURPOSES OF THE STUDY

The purposes of the study were to determine the effects of a sequential and structured perceptual-motor training program and a structured music program on:

1. The development of perceptual-motor skills, as measured by the Purdue Perceptual-Motor Survey.[10]
2. General behavior as observed in classroom activities, personal health habits, physical education participation, and social adjustment.

SIGNIFICANCE OF THE STUDY

Educators and clinicians have sought laboriously to collect supportive data illustrating that movement and physical activity will

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[9] Cratty, loc. cit., p. 3.

[10] Eugene G. Roach and Newel C. Kephart, The Purdue Perceptual-Motor Survey (Columbus: Charles E. Merrill Publishing Company, 1966).

enable groups of children to improve in academic ability.

In this day as special education makes its way to the fore, physical educators find themselves in a position to experiment with emphasis on sequential motor development and to seek out information and data that might shed light on the possibility of movement aiding in the amelioration of some of the problems of the mentally retarded and neurologically impaired.

It should be noted that more than half the studies done in this area have been completed since 1960. Also in these few studies, small numbers of subjects were used; and only the traditional programs of physical education have been incorporated. New and innovative programs of activity need to be utilized with the mentally retarded. Educational programs should be comprehensive and challenging. Cratty[11] states that:

> The increasing specificity of perceptual-motor functioning of children suggests that the range of activities offered should be broad, and include tasks of balancing, agility, locomotor activities, hand-eye coordination, as well as games that encourage visual tracking of objects.

It has also been suggested that rhythms and music may play an important part in the education of children, especially handicapped children.

A description of a music program for handicapped children is difficult to put into words. Because each child tends to be the exception, generalities are somewhat useless since this child or that child

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[11] Cratty, op. cit., p. 11.

has a unique need and consequently a different approach must be used. This is the nature of the individual handicapped child and the group tends to be unique. There is no norm; each child must be considered on his own merits and potential. Each handicapped child must be met as a person and then his handicap in relation to music considered. Rhythm is basic to all of life's activities. Music should be an important part of the educational program in the rehabilitation of physically handicapped and educable mentally retarded students.[12]

Music has characteristics that make it unique and an ideal means to aid the achievement of desired behavioral changes. A characteristic of the mentally retarded child is difficulty in verbal communication. This makes it very difficult for him to relate to other people. Music is a natural medium for aiding the retarded in relating to others and enhancing social development. Music also may provide the mentally retarded with security, gratification, and self esteem.[13]

DELIMITATIONS OF THE STUDY

This study was delimited to thirty educable mentally retarded children ranging in age from nine to twelve years. The children were chosen from special education classes in the elementary grades at the Children's Center of Montgomery, Alabama.

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[12] John Bixler, "Music for the Physically Handicapped," The American Music Teacher, XVIII (June/July, 1969), 21-32.

[13] E. Thayer Gaston, Music In Therapy (New York: The Macmillan Company, 1968), pp. 50-51.

Secondly, this study was delimited to a fifteen-week period of investigation.

LIMITATIONS OF THE STUDY

It was not possible to control the motivation and teaching ability of the teacher and numerous teacher aides that participated in the study.

The motivation levels and attitudes of the various subjects could not be controlled.

Finally, changes may have occurred due to maturation during the fifteen-week training period.

DEFINITION OF TERMS

Perceptual-Motor Program. This refers to a movement program designed to enhance the interaction of children with other persons, objects, and their environment in an attempt to develop the perceptual-motor attributes of laterality, differentiality, directionality, body image, form perception, balance, hand-eye coordination, ocular control, and gross motor coordination.

Music Program. The Music Program used in this study included songs, music, and rhythmic activities designed to teach the days of the week, group leadership, the colors, to learn to tell time, to exercise to songs, to initiate movement, and to learn the alphabet, good manners, and rhythmic counting using the feet and hands.

Educable Mentally Retarded (EMR). Educable mentally retarded persons are those individuals with intelligence quotients ranging between 50 and 80. They may be taught the basic academic skills and can usually be trained to be self sustaining in society.

Mild Range of Mental Retardation. Those individuals that fall within the intelligence quotient range of 55 to 69 as defined by the American Association of Mental Deficiency.[14]

Mental Age. Mental age refers to the intellectual functioning capacity of an individual.

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[14] Halbert B. Robinson and Nancy M. Robinson, The Mentally Retarded Child (New York: McGraw-Hill Book Company, 1965), p. 50.

CHAPTER II

REVIEW OF RELATED LITERATURE

For the purposes of this study, the review of literature has been categorized into four areas: (1) Motor proficiency in the mentally retarded child; (2) The effects of physical education programs on the mentally retarded child; (3) The effects of perceptual-motor training programs on the mentally retarded child; and (4) The effects of music on exceptional children.

MOTOR PROFICIENCY IN THE MENTALLY RETARDED CHILD

A considerable amount of research has been done concerning the motor proficiency of mentally retarded children. A majority of the studies done have compared the mentally retarded with the intellectually normal to determine what relationships exist in motor proficiency. Other studies were done to determine what influence such factors as age and sex play in motor proficiency. Subjects used in the studies reviewed were of a wide variety. Some investigators used institutionalized subjects; some used subjects from the regular classes of public schools; and still others were taken from special education classes.

One of the earliest studies dealing with motor proficiency of the mentally retarded was done by Bolton[1] in 1903. He tested 120 school children to find out whether on tests of motor power they showed the same backwardness and deficiency which had already become apparent in their school work. To determine motor power, tests of rapidity of voluntary control, of steadiness in standing, and of steadiness and precision in moving either hand, were chosen as most likely to give trustworthy results.

He concluded that for brighter children motor power increases with advancing age. They showed greater rapidity of motion, increased steadiness, and better precision than those children defined as backward. He said, "The aim of all instruction for the feebleminded is to awaken movement; when that has been accomplished, mental development will take care of itself."

Sloan[2] attempted to measure the relationship between mental deficiency and motor proficiency, and to demonstrate the applicability of the Oseretsky Test of Motor Proficiency to a more complete diagnostic evaluation of mental defectives. He attempted to determine if there were a "unique" pattern of motor proficiency for mental defectives as compared with the pattern found in normal children.

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[1] T. L. Bolton, "The Relation of Motor Power to Intelligence," American Journal of Psychology, XVI (October, 1903), 367.

[2] William Sloan, "Motor Proficiency and Intelligence," American Journal of Mental Deficiency, LV (January, 1951), 394-406.

The experimental group consisted of twenty mental defectives equally divided as to sex who were patients of the Lincoln State School and Colony of Illinois. The control group consisted of twenty normal children equated with the experimental group as to sex and chronological age. Only those subjects whose chronological ages were near ten years were selected. It was felt that this mid-point on the Oseretsky Test would allow a maximum spread of scores. The I.Q. range for the normal group was from 90-110. Sloan concluded that:

> Within the limitations of this study--motor proficiency is not a distinct aspect of functioning which can be isolated from general behavior, but is, rather, another aspect of the total functioning of the organism. It would appear that an adequate evaluation of adaptive capacity should include not only estimates of intelligence but of motor proficiency and social maturity as well. This study points up the desirability of developing incisive measures of motor proficiency.

Kulcinski[3] attempted to determine the effectiveness of fifth and sixth grade boys and girls with superior, normal, and subnormal intelligence quotients in learning selected muscular skills. He concluded that: (1) a relationship exists between intelligence and learning of fundamental muscular skills; (2) a relationship exists between intelligence and the degree of learning; (3) the ability to do simple skills enables one to do more difficult skills more easily.

Beaber[4] compared mentally retarded and normal children in

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[3] Louis H. Kulcinski, "The Relation of Intelligence to Learning of Fundamental Muscular Skills," Research Quarterly, XVI (December, 1945), 266-276.

[4] James Beaber, "The Performance of Educable Mentally

their performance on four tests of "simple fine motor ability." He used three groups of thirty subjects each. One group consisted of mentally retarded children, and a second group was composed of intellectually normal children of comparable chronological age. The third group consisted of intellectually normal children with mental ages comparable to the retarded group.

In analyzing the data, an analysis of variance was used. The results showed that the performance of the retarded group was below that of normal children of similar chronological age and was similar to the performance of the intellectually normal group with comparable mental ages in tests of simple motor response.

As a part of an intensive study evaluating the education of mentally handicapped children in special classes and in regular classes in the state of North Carolina, Thurstone[5] conducted a study of gross motor skills of mentally handicapped children. The purposes of this phase of the study were:

> 1. To measure the ability of mentally retarded children to perform selected gross motor skills.
> 2. To compare the gross motor achievement in these skills of the mentally retarded children with the gross motor achievement of normal children of the same sex and of relatively the same age.

Handicapped and Intellectually Normal Children on Selected Tasks Involving Simple Motor Performance" (unpublished Doctoral dissertation, Syracuse University, Syracuse, 1960).

[5] Thelma G. Thurstone, An Evaluation of Educating Mentally Handicapped Children in Special Classes and in Regular Classes, U.S. Office of Education (Washington: U.S. Government Printing Office, 1959), p. 187.

3. To determine the statistical significance of the differences in achievement.

The subjects used were white children in the age range of 7 through 15 years. The I.Q. range of the mentally retarded group was from 50-79 as determined by the Stanford-Binet. This group consisted of 559 subjects, 347 boys and 212 girls. The normal group consisted of 2,825 subjects; 1,604 boys and 1,221 girls.

Because of the age range of the groups, two test batteries were developed. One battery was developed for children of ages 7 through 9 and consisted of the following items:

1. Tennis ball throw for distance
2. Volley ball punt for distance
3. Standing broad jump
4. Tennis ball throw for accuracy
5. Side stepping
6. Forty-yard run
7. Strength of right grip
8. Strength of left grip

The second battery was developed for use with students whose ages range from 10 through 15 years. The test items were similar to those of the first battery. The only differences were that a softball was used for item 1 for the older group, a soccer ball was used for item 2, and the distances in the accuracy throw were greater.

For all ages and for both sexes, it was concluded that "the normal children were superior to mentally retarded children in their mean achievement on all eight selected gross motor skill items."

Scott,[6] in 1940, studied whether children of high I.Q.s differed from those of low I.Q.s in "speed and in variability of reaction and in relative decrease in speed accompanying increase in the complexity and arrangement of potential stimuli." He compared children with I.Q.s between 120 and 200 with 49 children of the same chronological age with I.Q.s from 63 to 94. It was concluded that in speed of reaction the high I.Q. group of boys definitely surpassed the low group in all tests, and high I.Q. group of girls were faster than the low I.Q. group.

Francis and Rarick[7] attempted to study the motor characteristics of the mentally retarded with some of the following specific purposes in mind:

1. To determine age and sex trends in certain gross motor abilities of mentally retarded children.
2. To compare motor achievement levels of the mentally retarded with normative data on normal children.
3. To determine if the interrelationships among gross motor functions of the mentally retarded are different from such interrelationships in children of normal intelligence.
4. To determine the extent to which the degree of mental retardation is related to the motor achievement of the slow learner.

This sample used 284 mentally retarded public school children with I.Q.s ranging from 50 to 90 and C.A.s from 7.5 years to 14.5

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[6] W. S. Scott, "Reaction Time of Young Intellectual Deviates," Archives of Psychology, CCLVI (July, 1940), 52.

[7] Robert J. Francis and Lawrence G. Rarick, "Motor Characteristics of the Mentally Retarded," American Journal of Mental Deficiency, LXIII (June, 1959), 792-811.

years. The subjects were tested on static strength, running speed, power, balance, and agility.

All children were tested individually on each event, with 10 to 15 children working in the testing area at a time. In most instances all tests were administered to a child on one day.

The results showed that the age trends in strength for each sex followed approximately the same patterns as those for normal children, although at a lower level at every age.

For the mentally retarded children studied, the mean on most measures for boys and girls was 2 to 4 years behind the published norms for children of comparable chronological age. Furthermore, the discrepancy between the normal and the mentally retarded tended to increase at each successive level. With more complex skills the discrepancy increased with advancing age.

The findings of the study demonstrated that intelligence measured by standardized intelligence tests was positively correlated with most of the motor performance tests. However, the coefficients were generally low and of approximately the same order as other investigators had reported for normal children.

They concluded that:

> . . . the motor retardation of the educable retarded child is perhaps greater than had been previously supposed; however, the evidence seems to indicate that the motor ability of these children are organized in much the same way as in normal children and that the development of these abilities follows similar developmental curves, although at lower levels than for normal children.

Howe[8] compared the motor skills of mentally retarded children enrolled in special classes and normal children. Children with suspected brain damage were not included. Each group consisted of 31 boys and 12 girls. The groups were matched with respect to chronological age, socio-economic background, and sex.

The tests of motor skills for this study required a variety of motor responses. Those selected required a minimum of intelligence for understanding. The motor tasks were:

1. Sargent-Jump
2. Balancing on one Foot
3. Tracing Speed
4. Tapping Speed
5. Dotting Speed
6. Grip Strength
7. Zig Zag Run
8. Fifty Yard Dash
9. Squat Thrust
10. Ball Throw
11. Paper and Pencil Maze Tracing

The tasks were administered individually with a demonstration and an opportunity to practice until the examiner thought the subject knew what was expected of him. For the most part, three trials were given, with the best of three recorded as the score. When fatigue was a factor, as in the 50 yard run, only one trial was permitted. Verbal reward was used for motivation.

The results showed that the normal boys were significantly

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[8] Clifford E. Howe, "Comparison of Motor Skills of Mentally Retarded Children and Normal Children," Exceptional Children, XXV (April, 1959), 352-354.

superior to the retarded boys on each of the 11 motor tasks. The normal girls were significantly superior in nine of the tasks and their superiority approached statistical significance in the other two.

Distefano, Ellis, and Sloan[9] investigated the relationship between intelligence and motor proficiency in mental defectives. Several motor tests and the Stanford-Binet Intelligence Scale were administered to 76 mental defective subjects. The motor tests used were the Lincoln-Oseretsky Motor Development Scale, the Health Rail Walking Test, the placing and turning sub-test of the Minnesota Rate of Manipulation Test, the Hand Steadiness Test, and the Hand Dynamometer Test.

It was concluded that there was a significant positive relationship between mental age and motor proficiency, but that task complexity and clinical etiology might have been significant variables affecting the scores.

In 1957, Rabin[10] attempted to determine the relationship of age, sex, and I.Q. to motor proficiency. Subjects were 60 institutionalized boys and girls between the ages of 10 and 14 with I.Q.s ranging from 40 to 69. Tools of measurement used were the Lincoln-Oseretsky Motor Development Scale, the Stanford-Binet Intelligence Test, and the Wechsler Intelligence Scale for Children.

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[9] M. K. Distefano, N. R. Ellis, and W. Sloan, "Motor Proficiency in Mental Defectives," Perceptual and Motor Skills, VIII (June, 1958), 231-234.

[10] Herbert M. Rabin, "The Relationship of Age, Intelligence, and Sex to Motor Proficiency in Mental Defectives," American Journal of Mental Deficiency, LXII (November, 1957), 507-516.

It was found that chronological age is significantly related to motor proficiency; however, motor proficiency was not found to be significantly related to intelligence quotients or sex.

Ismail and Gruber[11] investigated the effectiveness of an organized physical education program on intelligence and academic achievement and the relative contribution of the importance of coordination and balance items in the prediction of intellectual achievement. The subjects used were 122 boys and 89 girls between the ages of 10 and 13 years. Intelligence quotients ranged from below 85 to above 125. The Otis Short Form Test was used to measure intellectual performance.

According to the data collected, the following conclusions were reported: (1) there is a relationship between intellectual achievement and certain physical performance items; (2) coordination items, balance items, and growth items were the important predictors; (3) an organized physical education program has no effect on intelligence quotient scores; and (4) an organized physical education program has a favorable effect on academic scores.

Asmussen and Heball-Nelson[12] conducted an experiment to determine the influence of sex, age, and intelligence on the development

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[11] A. H. Ismail and J. J. Gruber, Motor Aptitude and Intellectual Performance (Columbus, Ohio: Charles E. Merrill, Inc., 1967), 21-30.

[12] E. Asmussen and K. Heball-Nelson, "Physical Performance and Growth in Children: Influence of Sex, Age, and Intelligence," Journal of Applied Physiology, VIII (January, 1956), 371-380.

of physical capacities in growing children. Subjects were 214 Danish girls and 204 Danish boys with ages ranging from 7 to 17 years. Subjects were classified according to their intelligence quotients, with an average of 112 and none lower than 95. Sixty-two boys from a special school for retarded children with an average intelligence quotient of 83 were also included.

Results showed that age seemed to have a positive influence on physical capacities. Intelligence seemed to play no statistically significant role as long as the intelligence quotient lay above 90. Boys with a lower intelligence quotient (average 83) on the whole performed less well than normal boys.

Sengstock[13] conducted a study to determine whether educable mentally retarded boys differ from intellectually normal boys of comparable chronological age and intellectually normal boys of comparable mental age in the performance of tests of physical fitness.

Three groups of 30 boys each were selected as subjects. On the basis of this investigation, educable mentally retarded boys, of the age groups measured, differed significantly from intellectually normal boys of comparable chronological age, and from intellectually normal boys of comparable mental age in the performance on the AAHPER

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[13] Wayne L. Sengstock, "A Comparison of the Performance of the Educable Mentally Retarded Boys with the Performance of Intellectually Normal Boys on the American Association for Health, Physical Education and Recreation Youth Fitness Test Battery," (unpublished Doctoral dissertation, Syracuse University, Syracuse, 1963).

Youth Fitness Test Battery. It was concluded that the mean performance of the mentally retarded boys was midway between the mean performance of the two normal groups.

THE EFFECTS OF PHYSICAL EDUCATION PROGRAMS ON THE MENTALLY RETARDED CHILD

Most of the research done in this area has been recent. The studies done have attempted to investigate the effects of planned physical education programs on the physical, intellectual, social, and psychological attributes of the mentally retarded. Subjects used have ranged from the trainable to the educable mentally retarded and have come from institutions, special schools, and regular schools.

Taylor[14] conducted a study to determine the impact of an organized physical education program on the development of motor skills, social behavior, and academic achievement of trainable mentally retarded students.

A random sample of 70 students was drawn from a population of 314 trainable mentally retarded children. Thirty-five were assigned to an experimental group and 35 were assigned to a control group and were all equated as to I.Q., C.A., and M.A.

The experimental group was exposed to an organized physical

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[14] George Robert Taylor, "The Relationship Between Varying Amounts of Physical Education upon the Development of Certain Motor Skills in Trainable Mentally Retarded Children," (unpublished Doctoral dissertation, The Catholic University of America, Washington, D.C., 1969).

education program for a period of six months. The control group continued to participate in the traditional educational program. The instruments used in this study were the Kraus-Weber Physical Fitness Test, the Cain-Sevine Social Competency Scale, and the Trainable Mentally Retarded Performance Profile as the academic measure.

The evidence stated in the results revealed that an organized physical education program does have a positive effect on the motor, social, and academic performance of a group of trainable mentally retarded children.

Beter[15] conducted a study in which 38 junior high school, educable mentally retarded boys and girls were used to determine the effects of a concentrated physical education program and a program of auditory and visual perceptual reading upon academic achievement, intelligence, and motor fitness.

Group one was composed of five boys and five girls who participated in a combined program of 80 minutes of concentrated physical education and 80 minutes of auditory and visual-perceptual reading training per week. Group two, also made up of five boys and five girls, was engaged in a program of 80 minutes of concentrated physical education and 80 minutes of classroom instruction per week. Group three

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[15] Thais R. Beter, "The Effects of an Organized Physical Education Program and an Auditory and Visual Perceptual Reading Program on I.Q., Academic Achievement and Motor Fitness of Educable Mentally Retarded Junior High School Boys and Girls," (unpublished Doctoral dissertation, Louisiana State University, Baton Rouge, 1969).

was made up of four boys and five girls and participated in a program of 80 minutes of auditory and visual-perceptual reading and 80 minutes of classroom instruction per week. Five boys and four girls served as a control group and received instruction in a special education class throughout each five-hour school day.

Data collected included scores obtained from the Gates-MacGinitie Reading Achievement Tests; The Wide Range Achievement Test; Wechsler Intelligence Full Scale Tests for Children and Adults; and a motor fitness test consisting of ten items. Intelligence quotients were significantly improved after participation in a concentrated physical education program. Intelligence quotients were not significantly affected by an auditory and visual-perceptual reading program. Finally, reading comprehension and arithmetic gains were significantly improved after participation in a combined program consisting of concentrated physical education activities and auditory and visual-perceptual reading.

Oliver[16] conducted a study using two groups of educable mentally retarded boys in two residential institutions in the United Kingdom. The two groups were matched as nearly as possible for age, intelligence, size, and physical condition. Nineteen boys were employed in the experimental group and 20 boys in the control group. The experimental group was given a course extending over ten weeks of

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[16] J. N. Oliver, "The Effects of Physical Conditioning Exercises and Activities on the Mental Characteristics of Educationally Sub-Normal Boys," British Journal of Educational Psychology, XXVIII (June, 1958), 155-156.

systematic and progressive physical conditioning and recreational activities of two hours and forty minutes during each day. The control group continued with their regular school program, which consisted of two physical education lessons each week plus organized games. There was a significant improvement in intelligence test scores as well as improvement in motor proficiency made by the experimental group. Oliver attributed these changes to such emotional factors as are affected by achievement, success, and improved confidence. Also because of the interest and attention centered on them, the boys experienced a feeling of importance and exhibited better adjustment. He concluded that more emphasis should be placed on physical education of exceptional children and that more time should be devoted to physical activities.

In a study by Corder[17] eight educable mentally retarded boys were given an intensive 20 day program of physical education. Eight educable mentally retarded boys designated as "officials" met each day with the training group while eight educable mentally retarded boys served as controls. Pretests and posttests were given on the Wechsler Intelligence Scale for Children (WISC), the AAHPER Youth Fitness Test, and the Cowell Personal Distance Scale. The training group and the officials' group were removed from their regular classroom five

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[17] W. O. Corder, "Effects of Physical Education on the Intellectual, Physical, and Social Development of Educable Mentally Retarded Boys," Exceptional Children, XXXII (February, 1966), 357-364.

times per week for four weeks. The training group took part in planned physical education lessons and the officials' group performed the duties of rating and keeping daily records on the training group. Much praise, individually and as a group, was given to the officials' group. This group was used in an attempt to study the anticipated Hawthorne Effect. The control group received the pretests and posttests but remained in the classroom and received the usual classroom instruction.

The training group made significant I.Q. gain scores on the Full Scale and Verbal Scale of the Wechsler Intelligence Scale for Children. The training group also made significant gains on the Youth Fitness Test. The officials' group and control group made no significant gains in I.Q. or fitness. There were no differences found between any of the groups in social status.

> Since the training group made significant gains in I.Q. scores over the control, but not over the officials' group, it indicated that the Hawthorne Effect was probably operating. However, since there was no difference between the officials' group and the control group, the Hawthorne Effect plus additional factors must have been functioning, which accounted for the gain scores made by the training group.

In 1962 Stein[18] conducted a study using 187 boys enrolled in six physical education classes of three schools in Fairfax County, Virginia. It was the purpose of this study to investigate changes in physical fitness

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[18] Julien U. Stein, "Physical Fitness in Relation to Intelligence Quotient, Social Distance, and Physique of Intermediate School Mentally Retarded Boys" (unpublished Doctoral dissertation, George Peabody College, Nashville, 1966).

in relation to intelligence quotient, changes in social distance, and physique of intermediate school mentally retarded boys after their participation in a regular physical education program for one school year.

Subjects were given the AAHPER Youth Fitness Test as a measure of specific components of physical fitness, the Cowell Personal Distance Scale as a measure of their degree of belonging to or being accepted as a member of their physical education class, the channels of the Wetzel Grid were used as a means of classifying physique, and the California Short Form Test of mental maturity was used as an assessment of intelligence quotient. The subjects,for purposes of analyses, were divided into five I.Q. groups: (a) 50-75 (EMR); (b) 76-90 (below average); (c) 91-110 (average); (d) 111-130 (above average); and (e) 131 and up (superior).

Results showed that: (a) the actual progress of these retarded boys paralleled that of the subjects in the other four I.Q. groups; (b) no positive relationship was found between I.Q. and changes in specific components of physical fitness of these mentally retarded boys; (c) no positive relationship was found between changes in social distance and changes in specific components of physical fitness.

Because of the similarity in physical education programs and of the physical and mental characteristics of the subjects from the participating schools, evidence was not such that definitive conclusions could be offered concerning the relationship between changes in

specific components of physical fitness and the quality of the physical education program in which these boys participated.

In 1966, Solomon and Pangle[19] attempted to assess changes in physical development in educable mentally retarded boys as a result of a structured physical education program. Subjects who participated in the study were 42 boys whose I.Q. scores on the 1937 Stanford-Binet ranged from 49 to 85.

Measures of physical fitness were obtained before and after an eight week program of planned and progressive physical education activities. The daily instructional period was divided into three segments of approximately 15 minutes each. Generally, the first 15 minutes consisted of warm-up and calisthenic drills; the second period was devoted to self testing, dual, and relay activities; and the final 15 minutes were used for teaching skills and participating in stunts and games. Follow-up data were also collected six weeks after the termination of the experimental program.

The following conclusions were supported from the posttest and follow-up data analyses: (a) levels of physical fitness can be so significantly improved as to allow a favorable comparison with the non-retarded peer group, and (b) significant gains demonstrated at the end of the experiment proper remained significant over a six week post experiment follow-up period.

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[19] Amiel Solomon and Roy Pangle, "Demonstrating Physical Fitness Improvement in the EMR," Exceptional Children, XXXIV (November, 1967), 177-181.

Baker[20] conducted a study in which 18 educable mentally retarded boys in intermediate and senior opportunity classes were used to determine the relationships between measures of physical fitness, intelligence, academic achievement, and emotional adjustment. The subjects were selected from the public school system in Alberta, Canada. The measuring instruments utilized in the study were the AAHPER Youth Fitness Test, the Non-Language Multi-Mental Test, the Stanford Achievement Test, and the Student Evaluation Scale.

The following conclusions were reported by the author: (1) the relationship between physical fitness and intelligence is low but positive; (2) a positive relationship exists between physical fitness and academic achievement among educable mentally retarded boys; and (3) a positive but low relationship exists between physical fitness and emotional adjustment.

Funk[21] conducted a study to investigate the effect of a planned physical education program on the physical, intellectual, social and psychological improvement of a group of children classified as trainable mentally retarded.

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[20] John W. Baker, "The Relationship of Physical Fitness to Intelligence, Academic Achievements and Emotional Adjustment Among Educable Mentally Retarded Boys," (unpublished Master's thesis, University of Washington, Seattle, 1964), p. 60.

[21] Dean Clarence Funk, "The Effects of a Physical Education Program on the Educational Improvement of Trainable Mentally Retarded Children," (unpublished Doctoral dissertation, University of Oregon, Eugene, 1969).

Thirty-eight trainable mentally retarded pupils enrolled at Pearl Buck School, Eugene, Oregon, were used as subjects. Subjects in the experimental group (N-20) were given a thirty-minute planned physical education program each school day for eleven weeks. The control group (N-18) usually had a free activity program or remained in the classroom and continued with the regular school program.

The findings revealed gains in the fitness and motor development areas but not reaching the .05 level of confidence. It was also found that the experimental condition had no effect in I.Q. and neither was there an increase on the social measure; however, there was an increase in mental age. It was concluded that the trainable mentally retarded can benefit from a planned physical education program.

THE EFFECTS OF PERCEPTUAL-MOTOR TRAINING PROGRAMS ON THE MENTALLY RETARDED CHILD

Singer and Brunk[22] utilized third and fourth grade children in an attempt to determine the relation of perceptual-motor ability and intellectual ability in elementary school children. The study was designed specifically to determine whether or not groups of children rated high and low in intelligence would perform similarly on perceptual-motor tasks.

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[22] Robert N. Singer and Jasper W. Brunk, "Relation of Perceptual-Motor Ability and Intellectual Ability in Elementary School Children," Perceptual and Motor Skills, XXIV (June, 1967), 967-970.

Forty-eight third grade and 43 fourth grade children from an elementary school composed of children from upper middle class families were administered the Figure Reproduction Test which is a series of perceptual-motor tasks. All of the students were also administered the Pintner Elementary Test and the Stanford Achievement Test.

The results confirm that some children display a motoric style while others are represented by a conceptual style. Low positive, and in some cases, significant relationships were obtained between the intellectual ability tests and the perceptual-motor test, but a general appraisal of the data indicates specificity of abilities.

McCormick, Schnobrich, and Footlik[23] conducted an experiment in the Meadows Elementary School, Lisle, Illinois. The subjects were 21 boys and 21 girls selected so as to have 14 sets of children, three in each set. These 42 underachieving grade one children were matched for age, sex, I.Q., and reading grade level.

Prior to the regular school day one group received perceptual-motor training in 45 minute periods twice a week, for seven weeks. A second group received exercises from the regular physical education curriculum twice a week for a 45 minute period prior to beginning the regular school day. A third group formed the control group and

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[23] Clarence C. McCormick, Janice Nelson Schnobrich, and S. Willard Footlik, "Improvement in Reading Achievement Through Perceptual-Motor Training," Research Quarterly, XXXIX (October, 1968), 627-633.

received no extra training, activity, or attention.

The Lee-Clark Reading Test was used as the measure of academic achievement. The 42 children were pre and post tested by their classroom teachers. The experimental group was found to have made statistically significant gains, while the other two groups had made no such gains.

Lipton[24] completed a study in which he used 92 subjects selected at random from the seven first grade classes in the Mt. Pleasant School District in New York State. The four classes, which were made up of children of normal intelligence and divided randomly into control and experimental groups, were equated in terms of height, weight, age and sex. The author attempted to determine if a program in physical education, which emphasizes developing the ability to comprehend spatial relations of objects which surround the child, can have a greater influence on perceptual-motor development, visual perception, and reading readiness than the usual programs offered first grade children.

The Purdue Perceptual-Motor Survey, the Developmental Test of Visual Perception, and the Metropolitan Readiness Tests were used to establish pre-experimental and post-experimental program scores in perceptual-motor development, visual perception, and reading readiness. There were two experimental groups and two control

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[24] Edward D. Lipton, "A Perceptual Motor Development Program's Effect on Visual Perception and Reading Readiness of First Grade Children," Research Quarterly, XLI (October, 1970), 402-405.

groups. During the experimental program both groups continued to participate in their regular classroom programs. These classroom programs were taught by the regular teachers and included basic reading readiness skills as part of the curriculum.

The two control groups participated in the conventional physical education program which included rhythms, relays, stunts, self-testing activities, and games of low organization. The instruction period during the experimental program was two 30-minute periods each week.

The difference scores were evaluated by two-part analysis of variances to determine if there were any significant differences. The experimental physical education program which emphasized directionality of movement produced significantly greater gains in perceptual-motor development, visual perception, and reading readiness than the conventional curriculum which did not have this emphasis.

Gillion[25] conducted a study to investigate the relationship between perceptual-motor ability and academic success of disadvantaged rural Negro children. In March, 1969, the California Achievement Test and the Purdue Perceptual-Motor Survey were administered to 127 second grade Negro students.

The Pearson correlation coefficient method of analysis revealed a significant relationship between the mean scores of the Purdue Per-

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[25] Hanna E. J. Gillion, "The Relationship Between Perceptual-Motor Ability and Academic Achievement of Certain Disadvantaged Rural Negro Children," (unpublished Doctoral dissertation, University of Alabama, Tuscaloosa, 1970).

ceptual-Motor Survey and the California Achievement Test at the .01 level of confidence.

K. Fisher[26] conducted a study in which 54 educable mentally retarded children were used as subjects. All children were pre-tested on a perceptual-motor scale, an intelligence test (WISC), and two achievement tests (WRAT and SAT). Following an 18 week training period the children were all post-tested with the same measures.

The study was designed to test the effectiveness of a structured program of perceptual-motor training, following Kephart's principles, with educable mentally retarded children. Each of the 54 children was randomly assigned to one of three groups. Children in Group T (Training) participated in an individualized, structured program of perceptual-motor training twice each week for four and one-half months. Children assigned to Group H (Hawthorne) also met with the trainer but played table games instead of doing perceptual-motor training. Group C (Control) children maintained their regular classroom schedules.

The hypothesis which predicted improvement of perceptual-motor abilities as a result of training, was not supported. Also, the hypothesis which predicted improvement in intellectual performance as a result of training, was not supported. However, all three groups of children demonstrated significant improvement from pre-test to

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[26] Kirk T. Fisher, "Effects of a Structured Program of Perceptual-Motor Training on the Development and School Achievement of Educable Mentally Retarded Children," (unpublished Doctoral dissertation, The Pennsylvania State University, University Park, 1969).

post-test on perceptual-motor scale total scores and on both achievement tests. In addition, both Group T and Group H showed statistically significant improvement in WISC Full Scale I.Q., suggesting the importance of the Hawthorne effect on intelligence test performance.

Okada[27] conducted a study to examine the effects of perceptual and perceptual-motor training on the visual perception, auditory perception, and language performance of institutionalized educable mental retardates.

One hundred and twenty boys and girls, all of whom resided at the Columbus State School in Columbus, Ohio, were used as subjects in this study. The chronological age range was from 8 years 6 months to 16 years 11 months, and their I.Q.s ranged from 50 to 75. The subjects were divided into four groups: Experimental I (perceptually trained group), Experimental II (perceptual-motorially- trained group), Control I (with interaction), and Control II (without interaction).

It was concluded that simultaneous training of the visual and auditory modalities was effective in raising the language performance as well as the perceptual performance of institutionalized educable mental retardates and that mental retardates may need more intensive motor training than 48 fifteen minute sessions as in this study for optimum results.

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[27] Doris Mamiya Okada, "The Effects of Perceptual and Perceptual-Motor Training on the Visual Perception, Auditory Perception, and Language Performance of Institutionalized Educable Mental Retardates," (unpublished Doctoral dissertation, New York University, New York, 1969).

O'Conner[28] conducted a study in which 59 boys and 64 girls were studied in order to determine the effects of physical activities suggested by Kephart upon the development of motor ability, perceptual ability, and academic achievement of first grade boys and girls.

The subjects were assigned at random to two groups, pre-tested on motor ability, perceptual ability, and academic achievement. The experimental group was presented with a six-month program of Kephart-type gross motor activities. The control group received a traditional physical education program. The groups were then post-tested immediately following the six-month experimental program. Findings revealed a positive change in gross motor ability, but for perceptual and academic measures, the only significant difference found between groups was that for the measure of internal awareness in favor of the experimental group. The conclusion drawn from this study is that change in gross motor ability elicited by the Kephart-type gross motor activities does not necessarily affect change in perceptual or academic ability of the average first grader.

Sontag, Baker, and Nelson[29] conducted an experiment in which 140 children were used to study individual and group differences in

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[28] Colleen Mary O'Conner, "The Effects of Physical Activities Upon Motor Ability, Perceptual Ability, and Academic Achievement of First-Graders," (unpublished Doctoral dissertation, University of Texas, Austin, 1968).

[29] L. W. Sontag, C. J. Baker, and V. L. Nelson, "Mental Growth and Personality Development: A Longitudinal Study," Monographs of the Society for Research in Child Development, XXIII (1958), 1-143.

mental ability and the relationships between intelligence quotient change and personality factors. Measures used in the study were a personality rating scale, attitude, apperception and personality tests, Stanford-Binet Intelligence Test Scores and other longitudinal records.

Data collected revealed the following results: (1) cycles of changes in intelligence quotients occurred in individual cases suggesting that there is no constant increment of change in intelligence quotients to be found in the majority of cases; (2) real changes in relative mental ability do occur in childhood; (3) accelerative and decelerative ratio of mental growth do not appear to be related to any specific areas of abilities as measured by the differences in performance on different types of items found in the Stanford-Binet; and (4) the various modes of personality by which children attempt to gain satisfaction in their experience appear to be of value in predicting intelligence quotients, and in understanding the nature of accelerated or decelerated mental growth as related to personality factors.

Argenti[30] attempted to determine the effects of systematic motor training on selected perceptual-motor attributes of mentally retarded children of the ages 8 through 14 years.

Three groups with 13 subjects in each group were formulated. Group one received a systematic motor training program. Group two

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[30] Rudolph Martin Argenti, "The Effects of Systematic Motor Training on Selected Perceptual-Motor Attributes of Mentally Retarded Children," (unpublished Doctoral dissertation, University of Tennessee, Knoxville, 1968).

received free play activities while group three viewed films and studied in a library. Group three was used as a control for the Hawthorne Effect.

The systematic motor training group received a program with emphasis placed on those activities which were related to: (1) visual dynamics (see and move), (2) auditory dynamics, (3) dynamic balance, (4) body awareness, and (5) unilateral and bilateral movements. These were the activities used to develop selected perceptual-motor attributes. The criterion used to measure the selected perceptual-motor attributes was Cratty's Perceptual-Motor Attributes Test.

It was found that both systematic motor training and free play will improve selected perceptual-motor attributes of mentally retarded children. There was, however, a marked rise in the improvement of the motor training group and a gradual rise in the improvement of the free play group.

Fisher[31] conducted a study to determine the effects of two types of physical education programs on motor ability, general intelligence and academic readiness of kindergarten children with two different backgrounds of experience in physical activity. Sixty-two subjects were used in the experiment. They were divided into two groups and presented differing programs of physical education. One group

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[31] David H. Fisher, "Effects of Two Different Types of Physical Education Programs Upon Skills Development and Academic Readiness of Kindergarten Children," (unpublished Doctoral dissertation, Louisiana State University, Baton Rouge, 1970).

participated in a traditional program consisting of supervised free play and games, while the other group participated in a sequential, individualized program of perceptual-motor activities.

The children participated in their respective programs approximately 20 minutes a day, five days a week for 22 weeks. The findings of the study revealed that there was no significant difference between students in the sequential, individualized program and the traditional program in improvement of intelligence scores, readiness scores or motor ability scores and there was no significant relationship between motor ability and intelligence or between motor ability and readiness.

THE EFFECTS OF MUSIC ON EXCEPTIONAL CHILDREN

Many studies have been reported on the use of music with psychotic persons. Of particular interest to researchers has been the use of music as a calming or exciting influence. Other studies reflect work with various types of exceptional children. However, only a few deal specifically with music programs for the retarded child. Central to this study is the assertion by Gaines and Raskin[32] that learning and perception will be more firmly established when they arise from multi-sensory input than they would be if only one sensory modality was used. The experiment investigated the influence of

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[32] Beverly J. Gaines and Larry M. Raskin, "Comparison of Cross-Modal and Intra-Modal Form Recognition in Children with Learning Disabilities," Journal of Learning Disabilities, III (May, 1970), 243-46.

visual and tactual training and test modalities in relation to form recognition in children with learning disabilities. A significant main effect was formed for training modalities with vision found to be better than touch.

Carey[33] conducted an experimental music education program with primary, intermediate, and junior high level mentally retarded children. The purpose of the study was to determine whether the mentally retarded progressed at the same rate in music as in academic subjects and to measure the effects of various types of music on the retarded. A questionnaire was also used to determine whether music is usually included as a part of the curriculum for the educable mentally retarded, what are the most frequently used musical experiences, and what methods are used to teach the educable mentally retarded.

Results from the experimental portion of the study showed that the mentally retarded progress at the same rate in music as in academic subjects, somber songs tend to cause a lack of interest, highly stimulating songs tend to cause a nervous reaction, and rhythmic activity enhances the development of self expression. The questionnaire revealed that a significant number of large cities include music as a part of the curriculum for the educable mentally retarded child. Singing was the most frequently used musical experience. The same

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[33] Margaretta Carey, "Music for the Educable Mentally Retarded," (unpublished Doctoral dissertation, Pennsylvania State University, University Park, 1958).

methods are used to teach the educable mentally retarded as are used with normal children with the exception of the teaching pace being slower with more repetition employed.

Fields[34] conducted a study to determine the effects of music on brain-damaged patients. Four adult brain-damaged patients were chosen as subjects for the study. Results of the case studies revealed that the rhythmic element in the music must be correlated with the patients' capacity for neuromuscular activities; disharmony of auditory or visual motor combinations can create excessive tension, anxiety, and sometimes fear; and, a carry-over into other activities is possible when relationships between organization of motion in various activities can be seen by the patient.

Ebey[35] conducted a study to determine the effects of a music therapy program on cerebral palsied children and to determine improved methods for its use. Personal observation was employed as the means of evaluation. Eight cerebral palsied children were utilized as subjects and in all eight cases it was observed that progress was made. It was concluded that music therapy can best aid the trainable cerebral palsied child by improving control. It also can help the child to recognize limitations and to gain confidence, independence and respect.

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[34] Beatrice Fields, "Music as an Adjunct in the Treatment of Brain-Damaged Patients," American Journal of Physical Medicine, XXXIII (October, 1954), 273-283.

[35] Dorothy Ebey, "Music Therapy for Children with Cerebral Palsy at the Ruth Lodge Residential School, Chicago, Illinois," (unpublished Doctoral dissertation, Chicago Musical College, Chicago, 1955).

Glover[36] undertook a case study to determine the effects of music activities upon a brain-injured child. It was concluded that music was effective in influencing the child's mood. The study also showed that music, specifically piano instruction, is one area in which the brain-damaged child might excel. It also offers the brain-damaged a means of sublimating tension. The subject used for this study was hyperactive and highly distractable as is characteristic of most brain-damaged children. Because the child was easily distracted, the lesson room contained only a piano and a chair. It was recommended that the mechanisms of musical instruments should not be used as motivating factors for stimulating interest because this increases hyperactive behavior. Finally, it was concluded that sedative music had a calming influence while the subject prepared for bed, but did not induce sleep.

Kaplan[37] designed a study to test the effects of a music program on children with speech and hearing problems stemming from organic impairments. It was concluded that the program was successful and had contributed to the established objectives. The music sessions were found to be more successful when divided in separate units of activities such as singing, listening, rhythms, and games. Flexible grouping was stressed in that some activities should be set up to

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[36] Barbara E. Glover, "A Case Study on the Use of Music Activities for a Brain-Injured Child," (unpublished Master's thesis, University of Kansas, Lawrence, 1955).

[37] Max Kaplan, "Music Therapy in the Speech Program," Exceptional Children, XXII (December, 1955), 112-117.

include only certain disabilities while others should be mixed. Finally, it was recommended that children should concentrate on a few instruments rather than many.

Ludwig[38] compiled a detailed progress report which described the many different therapies employed in a rehabilitation program for the mentally retarded hyperactive individual, with specific emphasis placed on music therapy. Primarily, the music was used as a disciplinary tool to aid the child in developing more acceptable behavior. Music was also used to strengthen the child's inhibition of random responses, purposeful movement, awareness and contact with other children, and concept of progression.

Cotter[39] conducted an experiment to test the effects of music on mentally retarded girls' performance of manual tasks. Sixteen subjects were matched on work rate and assigned to contingent and noncontingent music groups via the matched pairs procedure. Head phones were used and counterbalancing orders of music and no music were presented within ten 75-minute sessions. Findings revealed that productivity in manual tasks was enhanced by music conditions and the absence of music impeded production. Production increased when

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[38] Alice Jeanne Ludwig, "The Role of Varied Therapies in the Rehabilitation of the Retarded Child," American Journal of Mental Deficiency, LXI (May, 1957), 510-511.

[39] Vance Warren Cotter, "Effects of Music on Mentally Retarded Girls' Performance of Manual Tasks," (unpublished Doctoral dissertation, University of Kansas, Lawrence, 1969).

singing or movement occurred during work situations and contingent music provided conditions for appropriate social interaction, deviant behaviors decreased or did not occur. It was concluded that instrumentation of music presentation on a contingent basis was effective and it could be adapted by sheltered workshops and industry in cases of repetitive types of work.

SUMMARY OF THE LITERATURE

The first studies investigating the physical qualities of the mentally retarded began to appear in the United States during the early 1900s. These studies began to increase in number during the 1940s and flourished during the 1950s. However, it is interesting to note that a major portion of the research in this area has been done since the early 1960s.

A majority of the studies have attempted to measure or compare the mentally retarded with intellectually normal children on such variables as strength, power, endurance, balance, agility, reaction time, and flexibility. The remaining studies reviewed have attempted to investigate the effectiveness of various physical education and perceptual-motor programs on physical fitness, social development, motor ability, academic achievement, intellectual functioning capacity, and perceptual skills of the mentally retarded. Most of the earlier studies utilized institutionalized subjects; however, it was found through the review that more and more studies are being

conducted in day schools and the public school systems. Studies by Bolton, Beaber, Thurstone, Scott, Francis and Rarick, and Howe all yielded conclusive evidence that normal children were superior to the mentally retarded in motor proficiency. It was also found that increasing chronological age has a positive influence on physical capacities.

In studies measuring the effects of physical education programs on the mentally retarded, evidence was inconclusive. Beter and Oliver found that intelligence quotients were favorably affected by physical education programs. Others found that the intelligence quotient was unaffected by physical education programs. However, it was conclusive that physical fitness could be improved in the mentally retarded as it can in the non-retarded.

The results were inconclusive in the studies measuring the effects of perceptual-motor training on the mentally retarded. Some studies found that perceptual-motor training programs favorably affected academic achievement and the development of perceptual-motor attributes while other studies found that perceptual-motor attributes were not affected. In one study reviewed perceptual-motor training had no affect on the intelligence quotient.

In the few studies reported thus far involving physical traits of mentally retarded children, subjects of junior high school age and up have been used almost exclusively.

Modification of human behavior by music has intrigued educators,

psychologists, clinicians, and others for many years. The literature relating to music and exceptional children reveals that in earlier studies music was used entirely for its educational value; however, in the past quarter century there has been a deepening realization of the value of music as a therapeutic as well as an educational instrument.[40]

The studies reviewed included research done with the mentally retarded, the physically handicapped, and psychotic patients. It was generally concluded that music was of educational and therapeutic value. Earlier studies revealed that there was no consistent conclusion. Much of the more scientific, conclusive, experimental data has been gathered in the past 30 years.

These considerations should inspire members of the physical education profession to direct more studies, with more subjects of all ages, extended over longer periods of time, and utilizing new and innovative programs of physical education for the mentally retarded.

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[40] Gaston, op. cit., p. 490.

CHAPTER III

PROCEDURE

OVERVIEW

This study was designed to determine the effects of a perceptual-motor program and a music program upon the development of perceptual-motor skills and general behavior of educable mentally retarded boys and girls in the elementary grades.

Thirty educable mentally retarded elementary grade level boys and girls enrolled in special education classes at the Children's Center of Montgomery, Alabama were selected as subjects in this study. The subjects were chosen from five elementary special education classes housed at Capitol Heights Elementary School, Montgomery, Alabama. The subjects were placed in two groups of 15 each. A qualified music instructor for exceptional children and six trained teacher aides also participated in the study.

Prior to and at the conclusion of the 15 week training program all subjects were given the Purdue Perceptual-Motor Survey[1] in order to evaluate the effect of the training program on the development of perceptual-motor skills.

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[1] Roach and Kephart, loc. cit.

The children were also rated subjectively by the respective teachers at the end of each week of the training program. The purpose for this was to determine the effects of the training program on general behavior in other areas of the educational program. The teacher behavior rating scale was devised to evaluate the following: (1) classroom activities; (2) personal health habits; (3) physical education participation; and (4) social adjustment.

Finally, a daily anecdotal record was kept so that an exact record of daily activities and progress would be available for each individual subject.

METHOD OF RESEARCH

The method of research selected for this study was the case study technique. The case study approach has had limited use in the field of education and very few studies have appeared in the physical education literature. The case study is more commonly used in areas that deal with problems of a highly individualized nature such as law, medicine, and clinical psychology.

There are some restrictions in employing the case study approach, such as a small number of cases or a non-randomized sample; however, this does not always reduce the effectiveness of the data.[2]

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[2] Lawrence Rarick, Research Methods (Washington: American Association of Health, Physical Education and Recreation, 1959), p. 267.

Even though the case study is most often used to deal with problems of an individualized nature, data from many similar cases may furnish pertinent information for comparative studies and for examining factors closely associated with specific problems.[3]

In this study, case studies were compiled for each subject, using pre and post training session scores on the Purdue Perceptual-Motor Survey, teacher ratings, daily anecdotal records, and background information.

SELECTION OF SUBJECTS

A proposal containing a statement of the problem, purposes of the study, review of the literature, program content, and evaluation measures for this study was submitted to the administrator of the Children's Center of Montgomery, Alabama. Permission was obtained to conduct the study at Children's Center using the children enrolled during the 1971-72 school year.

The Children's Center of Montgomery is an educational and diagnostic center which renders services to exceptional children. The educational division of Children's Center serves the mentally retarded, the physically handicapped, children with learning disabilities, and the deaf and hard of hearing. The Diagnostic Clinic for Children, within Children's Center, accepts children of all ages and all races.

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[3] Ibid., p. 264.

Emphasis is placed on the younger children so that discrepancies may be discovered at the earliest possible age. Children up to age eight are given first consideration for services.

The Diagnostic Clinic for Children is one of many federally supported diagnostic centers throughout the United States. All services in the clinic are rendered without charge because the clinic is entirely supported with federal funds allocated to the Children's Center of Montgomery by the United States Children's Bureau, Welfare, Washington, D.C.

The professional staff of the Clinic consists of a pediatrician, who serves as medical director, two part-time psychologists, a nutritionist, a public health nurse, a social worker, a full time secretary and stenographer, and a clinic aide. The administrator of the Children's Center also serves as the administrator of the Diagnostic and Guidance Center where she is also an educational consultant. The educational staff of Children's Center includes a curriculum coordinator, a physical therapist, a physical educator, a guidance counselor, a music teacher, and special education teachers.

Referrals to the Diagnostic and Guidance Center are initiated by physicians, teachers, public health nurses, and any other agency or adult who can supply necessary background information. Parents themselves often seek the services of the facility on their own initiative.

At the time a parent makes contact with the Diagnostic Clinic, certain basic procedures are followed and referral forms completed. These forms supply the Clinic with information as to the child's behavior in the home, pertinent medical history, and scholastic standing. The facts obtained therefrom are carefully reviewed by all members of the professional staff, and parents are then notified as to whether or not the Diagnostic Clinic has a service to offer their child. In the event that no service is available at the Diagnostic and Guidance Center, a referral is made to an appropriate agency. When a child is accepted for evaluation, the following procedure ensues:

1. Social Service Intake Interview
2. Home visit by Public Health Nurse if indicated
3. Medical examination
4. Nutritional evaluation
5. Psychological testing.

Consultations are often requested and the services of the following specialists are utilized: Neurologists, Opthalmologists, Otolaryngologists, Psychiatrists, and Radiologists.

The professional staff of the Diagnostic Clinic maintains a close working relationship with all professionals in the community. Among these are physicians, the office of Economic Opportunity, State Crippled Children's Service, County Health Departments, Department of Pensions and Securities, Central Alabama Rehabilitation Center, Juvenile Court, Youth Aid Facility, Montgomery County Mental Health Association, Boards of Education, Family Guidance Service, and the two facilities for trainable mentally retarded children located in

Montgomery County.

In the academic year 1970-71, 247 children were evaluated of whom 199 were mentally retarded. Causes enumerated ranged from prenatal infection to psychogenic causes, as well as those associated with mechanical injury at birth, new growths, congenital defects, genetic disorders, visual and hearing handicaps, motor dysfunction, convulsive disorders, as well as numerous instances of minimal cerebral dysfunction.

During the spring semester of 1971 the investigator conducted a six weeks pilot study at Children's Center to work out the various procedures and mechanics of this study. At the beginning of the 1971 fall semester, records were reviewed and 30 of the educable mentally retarded elementary grade level boys and girls were chosen from those assigned to special education classes.

GROUP CLASSIFICATION

Thirty subjects were chosen according to sex (15 boys and 15 girls), intelligence quotient (50-80), and chronological age (9-12 years). The subjects were screened so that no one with a physical impairment that might prevent his participating in the program was chosen. Finally, no subjects classified as emotionally disturbed were chosen.

The subjects were placed in two groups of 15, equated so far as possible in regard to sex, I.Q., and chronological age. Group I had a mean C.A. of ten years three months, a mean M.A. of six years

eight months, a mean I.Q. of 65.5, and a mean Purdue Perceptual-Motor Survey score of 49.5. Group II had a mean C.A. of ten years six months, a mean M.A. of seven years one month, a mean I.Q. of 66.6, and a mean Purdue Perceptual-Motor Survey score of 48.9.

Group I was made up of 8 boys and 7 girls who participated in a combined program of 30 minutes of sequential and structured perceptual-motor training and 30 minutes of a structured music program each day, five days per week for 15 weeks.

Group II was made up of 7 boys and 8 girls who participated in only the structured music program for a period of 30 minutes each day, five days per week for 15 weeks.

TEACHING PROCEDURE

Subjects in Groups I and II participated in the special programs five days per week, from September, 1971 through January, 1972. The programs were conducted for a period of 15 weeks and followed the Children's Center academic calendar year.

The perceptual-motor program was administered by the investigator and six trained student aides. Because of the age range and desire of mentally retarded children for total attention, the subjects were divided into groups of two or three for activity and instruction. Larger group activity was also a regular part of the program.

The music program was directed by a qualified music instructor for exceptional children with the assistance of the six student aides.

Occasionally small groups were formed for activity and at times the boys and girls were divided and encouraged to compete against each other for motivational purposes. Large group activities were also a frequent occasion in the music program.

Group I participated in the perceptual-motor program in the first 30 minute session each morning. Upon completion of this session Group I then joined Group II for the music session. All subjects were taken from the classroom activities to participate in the special programs. Subjects were escorted to and from the classroom by the student aides.

The perceptual-motor and music programs took place in the auditorium and on the stage of Capitol Heights Elementary School. Capitol Heights Elementary School is a public school located one block from Children's Center. The Children's Center has special education classes under their jurisdiction housed at Capitol Heights Elementary School. Subjects for this study were chosen from these classes. A complete list of equipment used in this study can be found in Appendix E.

Perceptual-Motor Program.

The daily sequential perceptual-motor program was organized to meet the various objectives of developing perceptual-motor skills basic to learning readiness. These include body image, skills in space and direction, laterality, differentiality, form perception, perceptual organization, and movement patterns. Content and organization of

the perceptual-motor program were set up in seven major areas and divided in the following sequential developmental order: (1) Body Image; (2) Space and Direction; (3) Balance Activities; (4) Locomotor and Balance Activities; (5) Airborne and Balance Activities; (6) Form Perception; and (7) Hand-eye, Foot-eye Coordination. (See Appendix A.)

Music Program.

The structured daily music program was developed and directed by Mrs. Shirley McDonald of Children's Center. It was designed as a typical music program for the mentally retarded.

The activities included were songs, music, and rhythmic activities designed to help the children learn the days of the week, group leadership, the colors, to learn to tell time, to exercise to songs, to imitate movement, to learn the alphabet, good manners, and rhythmic counting using the feet and hands. (See Appendix B.)

DEVELOPMENT AND ADMINISTRATION OF TESTS

Purdue Perceptual-Motor Survey.

The Purdue Perceptual-Motor Survey was chosen to measure perceptual-motor skills in this study. It is not a test but a device to detect non-achievers in the classroom. Roach and Kephart have established norms for the survey by testing 297 subjects. Achievers and non-achievers can be separated by the use of a cut-off score which was

determined by the normative data. The cut-off score was set at 65 since 83 per cent of the achievers scored 66 or above. The authors also stated that the survey has been administered to a wide range of achieving children in the early elementary grades and it has been demonstrated that a relationship exists between perceptual-motor ability and academic achievement. Teacher ratings were used to establish validity, a Pearson coefficient of correlation of .654 was yielded. In order to establish reliability, the authors selected 30 children at random from the normative sample and test-retest scores yielded a coefficient of .946.

The authors also found that essentially no difference existed between sexes with regard to total scores obtained on the survey. Of the normative sample which consisted of 91 males and 109 females, the mean total score for males was 85.34 and the mean total score for females was 83.66. There was no significant difference between these two means.

This investigator also established reliability by randomly choosing 20 subjects from Children's Center during the 1971 summer program. The test-retest scores yielded a coefficient of .934.

All items except one were chosen from the Purdue Perceptual-Motor Survey for the purposes of this study. The subtest of rhythmic writing was not administered to some of the children in the collection of the original normative data. Therefore, rhythmic writing was also omitted from this writer's study.

All subjects were administered the Survey prior to and upon completing a 15-week training program. The subjects were tested individually. They were excorted to the stage, tested, and returned to the classroom by the investigator. Testing time was approximately 40 minutes. In the first few minutes an attempt to develop rapport was made. This was to relax the subject so that he could give his best possible performance. Each subtest was scored on a numerical scale from one up to four. One represents the lowest score attainable and four the highest. These subtests scores were totaled for one overall score. The possible overall score was 76. Measures were taken from the major headings and subtests as follows:

1. Balance and Posture
   a. balance beam (forward, backward, sidewise)
   b. jumping

2. Body Image and Differentiation
   a. identification of body parts
   b. imitation of movement
   c. obstacle course
   d. Kraus-Weber Test
   e. Angels-in-the-snow

3. Perceptual-Motor Match
   Chalkboard (circle, double circle, lateral lines, vertical lines)

4. Ocular Pursuit
   Both eyes, left eye, right eye, convergence

5. Form Perception
   Visual achievement forms (form, organization)

Teacher Rating Scale.

Forty-four items were devised and grouped on a teacher rating

scale to fulfill the purposes of this study. The investigator interviewed a curriculum coordinator, a classroom supervisor, and several classroom teachers in an attempt to devise a rating scale that would give a complete picture of the child in his daily school activities. These items were grouped under four major headings. Those were as follows: (1) classroom activities; (2) personal health habits; (3) physical education participation; and (4) social adjustment.

On Friday of each week during the 15-week training period, the five special education teachers subjectively rated each respective child from her classroom on each separate item. This method was employed in order to evaluate for carry-over from the training into other educational areas and classroom activities. (See Appendix C.)

Daily Anecdotal Record.

A daily anecdotal record was constructed by the investigator to record information concerning: (1) daily activities participating in; (2) time spent in each activity; (3) level of achievement; and (4) social behavior and general reactions to the program. A space was also provided for comments. The subject's name, the date, activities for the day, and time allowed for each activity were all recorded on the daily anecdotal record prior to each perceptual-motor and each music session. The investigator completed each anecdotal record for Group I after each perceptual-motor and music session. The music instructor completed each anecdotal record for Group II after each music session. (See Appendix D.)

CHAPTER IV

PRESENTATION OF CASE STUDIES

CASE I

Background Information. Josie was a nine-year-old female with an I.Q. of 74 and a mental age of six years seven months. She lived with her natural father, step-mother, four siblings, and two step-siblings. Josie repeated the first grade after experiencing much difficulty in her first school experience. The reason for referral to Children's Center was stated as academic failure. She appeared to be doing well after placement in the special education classes.

Josie was born with a "birth defect" described in the records as eventually going away. There was no other description of this defect. Her mother experienced a full-term pregnancy; however, one month before delivery she had a severe fall and received no medical attention for it. There was no evidence of any serious injuries, convulsions, or previous illness in Josie's background. The exact cause for the intelligence disorder was unknown.

Purdue Perceptual-Motor Survey. The subject was very pleasant and cooperative during the first administration of the Purdue

Perceptual-Motor Survey. Rapport was easily attained with Josie. She could follow simple directions, but motor coordination was below average. Her total score on the Purdue was 49, which is 16 points below the cut-off point of 65 that separates the achievers from the non-achievers.

There were indications of problems in the areas of balance, body image, and differentiation. There was also evidence of temporal lag and confusion on the assymmetrical hopping patterns. Problems were also indicated in the area of perceptual-motor matching; it was definitely noted that a distinct mid-line problem existed.

Finally, problems were noted in the areas of ocular pursuit and form perception. There were major discrepancies in ocular pursuit, as Josie scored only eight points of a possible 16. It was indicated that form perception was very poor; however, organization of the figures was good.

Rapport was attained easily and the subject was pleasant and cooperative when retested on the Purdue Perceptual-Motor Survey. She appeared to be confident on most items and it was evident that motor coordination was much improved. Josie's final score was 72, a coordination increase of 23 points. This score lies seven points above the cut-off between achievers and non-achievers.

There was evidence of much improvement in the areas of balance, body image, and differentiation. There was also an indication of some improvement on the symmetrical and assymmetrical

hopping patterns; however, there remained evidence of the temporal lag. Improvement was also made in the area of perceptual-motor matching. There was no longer any indication of a mid-line problem.

Finally, marked improvement was made in both ocular pursuit and form perception. The highest score possible was attained on each item.

Perceptual-Motor and Music Programs. Josie was definitely one of the most pleasant and cooperative of all subjects. She was consistently quiet, attentive, and always made an effort to do what was asked of her. In the beginning of the program, however, Josie exhibited a lack of social adjustment. Her feelings were easily hurt by others and she would withdraw from the group and cry. It appeared that she could not relax. She had little confidence and did not interact readily with others. As the program progressed, Josie was much more relaxed, exhibited a much improved self concept, interacted with peers readily, and began to smile frequently. It was concluded that Josie had made major adjustments socially and emotionally and apparently felt more a part of the group.

In consideration of the perceptual-motor skills, Josie possessed good body image. Gross motor coordination was fair in the beginning and was rated good by the end of the program. During the perceptual-motor program the subject made her greatest progress in the area of balance and airborne activities. She especially enjoyed the modified

trampoline and learned many of the basic stunts. She also exhibited much improvement in the ball handling and other hand-eye coordination skills. She learned to bounce, catch, and toss balls and beanbags with either hand while balancing on a balance board.

In the music activities Josie's progress was impeded in the beginning by her poor self concept and lack of confidence. She would hold back, especially in music activities where performing before the group was called for. It was noted by the investigator that her capabilities were greater than what was being exhibited. As the program progressed the subject began to appear happier and more content. Toward the end of the program, she became much more verbal and even volunteered to perform before the group. One of Josie's weaker areas in the beginning was the creative activities, due mainly to the poor self concept and lack of confidence. She eventually enjoyed movement exploration activities, however. In the end Josie was exhibiting a great interest in all activities and occasionally even asked to stay and continue after the regular sessions were completed.

Social and Emotional Classroom Behavior. It was the opinion of the subject's classroom teacher that she made improvement in all of the four major areas on the teacher rating scale: (1) classroom activities, (2) personal health habits, (3) physical education participation, and (4) social development.

In the area of classroom activities, the teacher observed that

retardation with the subject exhibiting poor motor coordination and characteristics of cerebral dysfunction. The subject was three years old before being toilet trained. Finally, there was a diagnosis of a likelihood of mild emotional disturbance.

Len was referred to Children's Center at the age of four because of a retardation of speech development and had done satisfactorily in special education classes since beginning his formal education. The subject was the youngest of four siblings and all attended special education classes. It was reported that Len related well socially and was courteous and polite.

Purdue Perceptual-Motor Survey. It was noted that the subject was highly distractable during testing on the initial administration of the Purdue Perceptual-Motor Survey. Nonetheless, fairly good rapport was developed and maintained. Len was generally quiet, attentive, and reacted indifferently to failure or success on each item. It was very difficult for him to follow instructions and he always waited to be told when to initiate activity. Furthermore, he always sought to terminate activity as quickly as possible, probably because of apprehensiveness and lack of confidence. The subject needed constant praise and encouragement. His total initial score on the Purdue was 61, only four points below the cut-off point that separates the achievers from the non-achievers.

There were indications of some problems in the areas of balance,

body image, and differentiation. Movement was slow and deliberate on the symmetrical and asymmetrical hopping patterns with a temporal lag being evident. The problems of poor body image and differentiation were again indicated in the hopping patterns.

Also in the area of perceptual-motor matching, it was evident that directionality was poor and there were indications of a mid-line problem.

Finally, in the area of ocular pursuit and form perception scores were high. There was only slight evidence of some minor difficulty in form perception.

When re-tested on the Purdue Perceptual-Motor Survey, the subject was very pleasant and cooperative. Rapport was easily attained and he was very attentive throughout. In contrast to the initial evaluation, Len projected confidence and appeared to enjoy the testing period. In many instances he initiated activity rather than waiting to be told. He also was persistent and eager to continue all activities. His final score was 64, an increase of three points. This score lies only one point below the cut-off that separates the achievers from the non-achievers.

In comparison to the initial evaluation, not only was there improvement in the areas of balance, body image, and differentiation, but also performance had improved on the symmetrical and asymmetrical hopping patterns.

In the area of perceptual-motor matching it was evident that problems continued to exist in directionality; however, the mid-line problems were no longer evident.

Finally, it was evident that some minor problems continued to exist in the areas of ocular control and form perception.

Perceptual-Motor and Music Programs. Len was one of the most inconsistent of all participants in the program. Especially in the early stages of the program, his behavior would change almost completely from one day to the next. This behavior apparently was due to a poor self concept and a lack of confidence in his ability. There was evidence of an emotional problem as he would frequently withdraw from the group and hide behind the curtain, under the piano, or would seat himself in the back of the auditorium.

Also, at the beginning of the program, Len was socially inadequate. He did not interact readily with others and held little enthusiasm for the program. He was not cooperative, and it was evident that he found it difficult to relax within the group. But by the third week of the program, Len began to show more expression; he was smiling more frequently although his behavior continued to be very inconsistent. He exhibited signs of gaining confidence, appeared more relaxed, and was more cooperative. From time to time he would hide behind the curtain, retreat to the back of the auditorium, and occasionally have conflict with others. During the eleventh week Len suddenly

began to be consistent in his behavior. It was noted that he no longer had an occasional bad day. He was consistently more relaxed, more confident, and happier. He was smiling frequently and readily interacting with others. He was finally exhibiting that he felt he belonged as a part of the group. This behavior continued through the fifteenth week.

In the development of perceptual-motor skills, it was evident that Len made substantial gain in several areas. He made marked progress in hand-eye coordination and ball handling skills. In the beginning, Len found it very difficult to catch balls and beanbags. He hardly could stand still and bounce or dribble a playground ball three or four times without losing the ball. During the course of the program he advanced to tossing and catching beanbags and balls rather confidently while balancing on a balance board. Another area in which Len demonstrated marked progress was in balance and airborne activities. He made rapid progress on the balance beam and learned to perform many of the basic stunts on the modified trampoline.

The perceptual-motor skills of laterality and directionality were very poor in the early stages of the program. This was exhibited in the laterality and directionality activities using objects and other people. Performance on the balance beam also established that laterality was lacking. However, it was noted that as self concept improved and Len gained confidence, the skills in these areas improved rapidly with practice.

Len's poor self concept and lack of confidence in his abilities seemed to impede what progress he may have made in the music activities. His speech impediment was also a major factor in preventing success in much of the music activity. For several weeks Len would either attempt to set himself aside from the group or would attempt to focus his attention upon something other than the music activities. Apparently in order to distract from his inadequacies he would be disruptive and even cause conflict with others. During the seventh week Len exhibited that he had gained self confidence, for he began to smile, interact readily with others, and even join in some of the group activities. However, Len was not consistent with this behavior; and even though he had shown improvement, he was very erratic through the last weeks of the program. It was very interesting to note that during the early part of the program his good days were usually always on Monday, but by the end of the program he had good days later in the week also.

Social and Emotional Classroom Behavior. It was the opinion of the subject's classroom teacher that he made improvement in two of the four areas on the teacher rating scale, classroom activities and personal health habits.

In the area of classroom activities Len improved in following directions and giving appropriate responses; and he also exhibited more imagination and improved on completing assigned tasks.

In the area of personal health habits it was noted that Len

improved in taking care of materials and personal belongings.

In physical education participation ratings were generally high and there was no change throughout the program.

Finally, it was the opinion of the teacher that the subject was well adjusted socially. Again, the ratings were generally high and remained consistent throughout the program.

CASE III

Background Information. Wally was a ten-year-old male with an I.Q. of 68 and a mental age of six years seven months.

There were no reports of problems concerning pregnancy or delivery in Wally's medical history. There were severe developmental delays as Wally was late in learning to walk and to talk. There was a history of chronic speech difficulties. A chromosomal study was recommended and performed with nothing of significance being yielded. The subject was functioning at the upper end of the mild educable range of mental retardation.

Wally lived with both his natural parents and one sibling, an eight-year-old sister. He attended a private school in his first year and was referred to Children's Center by his teachers and principal. He was evaluated and placed in special classes. In special education he had done satisfactorily in academics. Socially, he seemed to be happy and was well liked by his classmates. It was reported in the record that he participated in physical activities and was poorly coordinated.

Purdue Perceptual-Motor Survey. Rapport was easily attained with the subject on the initial administration of the Purdue Perceptual-Motor Survey. It was noted that he was distractable and talkative during testing. He waited to be told what to do, but was very persistent and eager to continue once he began activities. His initial score on the Purdue was 35, one of the lower scores attained by any subject. This was 30 points below the cut-off between achievers and non-achievers.

There were indications of severe problems in the areas of balance, body image, and differentiation. There were also problems in laterality and motor patterns. A temporal lag was evident on the symmetrical and asymmetrical hopping patterns. Wally could not identify all the body parts and was not fully aware of their usage.

In the area of perceptual-motor matching, the problem in directionality was again evident and a mid-line problem was also indicated.

Finally, in the areas of ocular pursuit and form perception, severe problems were indicated. The very lowest scores were attained on all items.

The subject was very pleasant and cooperative when re-tested on the Purdue Perceptual-Motor Survey. He was somewhat talkative and rapport was easily attained. Wally waited to be told what to do, but was persistent and eager to continue each activity. His final score was 50, an increase of 15 points from the initial score. This

score lies 15 points below the cut-off between achievers and non-achievers.

As compared to the initial evaluation, improvement was made in balance, laterality, body image, and differentiation; however, there still existed some difficulties in these areas. The subject had also made slight improvement in jumping and had learned to skip. Difficulties remained in the symmetrical and asymmetrical hopping patterns.

In the area of perceptual-motor matching, again it was indicated that directionality was poor. It was also evident that a mid-line problem continued to exist.

Finally, in the areas of ocular control and form perception, slight improvement was indicated; however, it was evident that major discrepancies continued to exist in these areas.

Perceptual-Motor and Music Programs. Wally was consistently one of the most pleasant and cooperative of all participants. He was a very happy child and was well liked by all members of the group. As indicated, Wally appeared to be very well adjusted socially. He was always enthusiastic toward the program, possessed confidence, and interacted readily with others. There was never evidence of any emotional imbalance observed by the investigator.

It was evident that Wally made marked progress in several of the perceptual-motor skill areas. In the beginning, he was inadequate

even on the basic gross motor patterns. He could not skip or gallop and was lacking on the basic hopping patterns. On the third day of the program Wally learned to skip. During the second week he learned to gallop. He continued to make progress throughout the program on the basic patterns of running, walking, and jumping. Toward the middle and by the end of the program, he was hopping, skipping, and galloping readily. The subject also made marked progress in the areas of hand-eye coordination, foot-eye coordination, and ball handling skills.

An area of special interest to Wally, and one in which he made marked progress, was that of balance and airborne activities. He advanced rapidly on the balance beam and learned many of the basic stunts on the modified trampoline. At the beginning, Wally was also poorly oriented to activities that required good body image and spacial relationships. However, it was exhibited that marked improvement was made during the course of the program in the areas of laterality, directionality, body image, and spacial relationships.

In conclusion, it was apparent that Wally was lacking in all areas at the beginning of the program. As he improved his skill in each area, it was evident that this enhanced the growth of self confidence and self concept.

Wally's behavior in the Music Activities was similar to that in the perceptual-motor program. He was pleasant and cooperative throughout. Though he enjoyed the music activities very much and tried very hard, Wally had much difficulty in learning the words to

songs and keeping time with music.

By the fifth week of the program, Wally had gained confidence and self concept had improved. At this point, he began to learn some words to songs. Even though this was very difficult for him, he continued to be pleasant, cooperative, and enthusiastic. By the end of the program, Wally had improved in following directions and exhibited more imagination. It remained difficult for him to remember words to songs, but the enthusiasm, cooperation, and pleasantness continued.

Social and Emotional Classroom Behavior. It was the opinion of the subject's classroom teacher that he made improvement in all four areas of the teacher rating scale. Improvement was exhibited in classroom activities, personal health habits, physical education participation, and social development.

In the area of classroom activities, Wally made improvement on following directions, giving appropriate responses, and remembering things. It was also found that he made marked improvement in form and organization on written tasks and exhibiting imagination. During the tenth week, it was observed that Wally was no longer as easily distracted as in the beginning of the program. Finally, it was observed that he no longer complained about assigned tasks. Drawings and paintings were neater, and he had improved in that he no longer ran into people and objects accidentally.

In personal health habits, the subject made improvement on two

items. It was observed that from the third week and continuing throughout the program, Wally was not as nervous as in the beginning. He also made improvement in keeping materials and personal belongings in neat arrangement. The teacher noted here that Wally was always very willing to share any of his personal belongings.

In physical education participation, the subject improved in that better coordination was demonstrated in large muscle activities. It was also noted that improvement was made in balance and body control. Also, better sportsmanship was exhibited by the subject.

It was finally observed that Wally made improvement in social development. He gained self confidence and became more independent in initiating activity. The subject also began to be able to accept constructive criticism more readily and became less apt to tell falsehoods.

CASE IV

Background Information. Louise was a nine-year-old female with an I.Q. of 57 and a mental age of five years three months.

There were no reports of any problems concerning pregnancy or delivery in the subject's medical history. She had had none of the childhood contagious diseases. A medical evaluation was taken in 1969; the child was seven years old at the time. The prognosis given was "hyperactive brain syndrome affecting area of intelligence." The child was placed on medication to control the hyperactivity.

The subject began school at the age of six years. She experienced

academic failure in this first year and was considered to be a behavior problem, was hyperactive, and was highly distractable. Louise was referred to Children's Center for evaluation after completing the first year of school. It was recommended that she be placed in a special education class for the educable mentally retarded. It was reported that Louise made satisfactory progress in the special classes as she learned to cope with her problems of hyperactivity, distractability, and impulsivity. It was also reported that she did not mix well with classmates and preferred to be around adults.

Purdue Perceptual-Motor Survey. The subject appeared to be highly distractable during the initial testing on the Purdue Perceptual-Motor Survey. The child was very talkative, however, and rapport was easily attained with her. She was classified as being hyperactive and was affected when failing to perform as she desired. Performance was impeded by the distractability. She could follow only simple directions and found it difficult to attend to a task for any length of time. Her total score on the initial evaluation was 48, which is 17 points below the cut-off that separates the achievers from non-achievers.

Indications were that problems were prevalent in the areas of body image, balance, and differentiation. A temporal lag was also evident when she attempted to perform the symmetrical and asymmetrical hopping patterns.

Much difficulty was also experienced in the area of perceptual-

motor matching. Directionality was incorrect and a mid-line problem was apparent.

Only slight difficulty was indicated in the area of ocular control; however, major problems were evident in the area of form perception. Her drawings were segmented with "ears" on the diamonds, and the figures were markedly smaller than the originals.

The subject was very pleasant and cooperative during the final evaluation on the Purdue Perceptual-Motor Survey. Rapport was easily attained and the subject no longer exhibited a distractable behavior. In contrast to the initial evaluation, she projected confidence and was not as apprehensive as before. Her final score was 67, a substantial increase of 19 points. This score lies two points above the cut-off between achievers and non-achievers.

Improvement was made in the areas of balance, body image, and differentiation. Performance also had improved on the symmetrical and asymmetrical hopping patterns.

In the area of perceptual-motor matching the directionality problem had been corrected and the mid-line problem was no longer evident.

There was no problem in ocular control and marked improvement was exhibited in form perception.

Perceptual-Motor and Music Programs. Louise was a very interesting case and probably made the most abrupt behavioral change

of any of the participants in the program. She possessed a very poor self concept, lacked confidence in her abilities, and very rarely stayed for a complete session during the early stages of the program. There was evidence of some emotional disturbance. She was very apprehensive in most situations and demonstrated that it was very difficult for her to control these emotions; if Louise was asked a question, she would usually answer by shaking her head, and she would shake her head vigorously, in an almost uncontrollable manner. If someone attempted to make contact by placing a hand on her shoulder, she would withdraw by moving back or running away. She would sporadically laugh or talk in an unnecessarily loud manner. It was determined as the program progressed that this was an attention getting device.

Louise was also socially inadequate in the early stages of the program. She was apprehensive, lacked confidence, and could not relax within the group. The subject was uncooperative, did not interact readily with others and held little enthusiasm for the program. During the first several weeks of the program, Louise would occasionally become so upset that she would return to the classroom before the regular session was complete. During the third week of the program she chose to remain in the classroom for a day and did not come into the program at all. She returned the next day and had four excellent days in which she participated enthusiastically and appeared very happy. This inconsistency continued through the twelfth week.

It was at this time that she began to show marked improvement and be more consistent; and from that time on, she never left a session to return to the classroom before the session was over. She began to interact more readily with others, was smiling more frequently, and appeared to feel more a part of the group.

In the development of perceptual-motor skills, Louise made a substantial gain in several areas. At the beginning, she was lacking in the performance of the basic skills, but her overall ability to move and learn new skills seemed adequate. Her most outstanding successes were in the area of balance and airborne activities. From the very beginning she improved rapidly on the basic locomotor skills of hopping, jumping, and skipping. Marked progress was also noted in the area of hand-eye coordination and ball handling skills. At first she could hardly bounce or toss a ball up and catch it. She advanced from that to the point of bouncing the ball with either hand while walking and tossing beanbags and balls with a partner while balancing on a balance board. Rapid progress was also made in the areas of body image, laterality, and directionality as evidenced in the basic movement exploration activities. The perceptual-motor skills of laterality, body image, directionality and differentiation were also improved in the balance beam and modified trampoline activities. These were two areas in which Louise made substantial progress and which she thoroughly enjoyed.

Louise's lack of confidence and her lack of ability to interact

with others appeared to be the major factors impeding progress in the music activities from the beginning. The behavior here followed a pattern similar to that in the perceptual-motor program. She was frequently disruptive and in conflict with others. She was physically aggressive and seemed to enjoy picking at others. During the tenth through the twelfth weeks, Louise's behavior began to improve. She no longer expressed a desire to return to the classroom during a session. She began to interact with others, smiled frequently, and gained self confidence rapidly. She began to participate in all group activities, felt more a part of the group and even volunteered to perform before the group.

Social and Emotional Classroom Behavior. It was the opinion of the classroom teacher that improvement was made in all four areas on the teacher rating scale. Improvement was exhibited in classroom activities, personal health habits, physical education participation, and social development.

In the area of classroom activities, Louise was not as easily distracted, became more relaxed, and eventually complained less about assigned tasks. It was observed by her teacher that she became easily upset if she was not allowed ample time to complete her academic work.

In personal health habits, improvement was made in only one area, but it was marked improvement. After the twelfth week the

subject appeared markedly less nervous than in the beginning. Her teacher commented that Louise was overly concerned about neatness and had a great fear of losing or messing up any of her work or materials. She talked of "beatings" if this did occur.

There was marked improvement on several items in the area of physical education participation. The subject became much more enthusiastic about physical activities and markedly improved in sportsmanship. Louise also demonstrated an improved balance and body control along with improvement in hand-eye, foot-eye coordination. Her general attitude about physical activity improved, as she never complained about having to continue to play as she did in the beginning. She also improved in her willingness to play with the opposite sex. It was interesting to note that these marked changes all occurred during the span between the tenth and twelfth weeks of the program.

Marked progress also was made in the area of social development. The subject gained in self confidence and after the twelfth week was more readily interacting with her peers. She became more willing to attempt new activities, did not become upset as easily, and demonstrated a less hyperactive behavior. Louise appeared to be happier, was able to accept criticism better, and was not as fearful of her environment and others as before. Louise made a marked improvement in her relationship with others. As the program progressed she complained less that others did not like her.

The final comment by the teacher was that she had noticed a

remarkable improvement in Louise's willingness to participate in team games. She was not so easily discouraged and would continue to play if she made an error. Previous to the perceptual-motor training program, she would become upset easily and quit.

CASE V

Background Information. Dana was a ten-year-old female with an I.Q. of 60 and a mental age of six years two months.

There were no reports of any problems concerning pregnancy or delivery in the subject's medical history. The subject was referred to Children's Center by a County Department of Family and Child Services. Hyperkinesis, resulting from brain damage was being controlled by tranquilizing medication. It was suggested that the subject's condition was partially attributable to her economically impoverished background.

The subject lived in the home with three other siblings and only the mother as a parent. Dana attended regular classes through the fourth grade in another state. The subject moved to Alabama at the age of nine and started school in the regular classes in September, 1969. In October, 1969 she was referred because of hyperkinetic behavior and academic difficulty. She was described as being less than adequately adjusted socially and preferring solitary activities. She was classified as functioning in the upper part of the mild range of mental retardation and was recommended for special education classes.

Purdue Perceptual-Motor Survey. Rapport was easily attained and the subject was very attentive on the initial evaluation. The subject was relatively quiet during the administration of the Purdue Perceptual-Motor Survey. Motor coordination was rated as average, but the subject could only follow simple directions. Dana was persistent and eager to continue on all items. This was attributed to the fact that she was rather successful on most of the items. Her total score on the initial evaluation was 54, which is eleven points below the cut-off between achievers and non-achievers.

There was no evidence of any problems in the area of balance and posture. There were, however, some indications of problems in the areas of body image and differentiation. Finally, there were no signs of any problems on the hopping patterns.

Difficulty was experienced in the area of perceptual-motor matching. Directionality was poor and there was evidence of a midline problem.

In the area of ocular pursuit, perfect scores were attained with no indication of any problems whatsoever. However, in the area of form perception, there was evidence of major difficulty; the lines of the divided rectangle were segmented; there were ears on the forms; and the figures were markedly smaller than the originals.

The subject was quieter and more attentive in the testing situation than usual. She was very pleasant and cooperative and performed very well on the final administration of the Purdue Perceptual-Motor

Survey. Her total post score was 58, an increase of four points. This score lies seven points below the cut-off separating the achievers from the non-achievers.

There was virtually no evidence of any problems in the areas of balance, body image, and differentiation. There were also no signs of any serious problems on the hopping patterns.

Difficulty was experienced in the area of perceptual-motor matching. Directionality continued to be poor. However, there was no longer any evidence of a mid-line problem.

In the area of ocular pursuit, problems were evidenced that were not apparent in the initial testing. Pursuit was poor when the subject used each eye individually and convergence was sluggish.

Perceptual-Motor and Music Programs. Dana was probably the most physically capable student in the program. She possessed above average motor ability for an educable mentally retarded child. It was suggested in her medical records that she possibly possessed greater potential since she came from an economically impoverished background. She was socially inadequate in that she did not interact readily with others. The subject had a friend in the program, and she made an attempt to stay by her side constantly. Dana possessed a strong personality and was a domineering influence over her friend. She often would pretend not to understand directions and would follow improper procedures in an activity. She would also coax her friend

into playing along with her. The subject always appeared happy; she would even continue to smile when being corrected for misbehaving. She never talked back or disobeyed, and she was devious only when she felt the teacher was not looking. There were no signs of any emotional disturbance.

Dana did not make marked progress in the development of perceptual-motor skills. Her ability to move and learn new skills also seemed adequate. During the fourth week Dana's behavior began to improve. She began to follow directions better and was more cooperative in performing the activities properly. During the fifth and sixth weeks Dana began to interact with others more readily and was more relaxed than in the beginning. The only areas in which Dana appeared to be lacking were in directionality and laterality with objects and other people; however, as the program progressed, she improved upon these abilities.

It was the opinion of the investigator that as the subject made progress socially she regressed in behavior. As she became better adjusted and more at ease with the group, her behavior worsened. She was louder and more disruptive toward the end than in the beginning.

In the beginning of the music program, Dana was very apprehensive concerning the activities. She lacked confidence and was very unsure of herself, so she chose to sit in back of the group and not participate. During the third week she began to gain confidence.

She became involved in the music activities that involved movement and dance. She especially excelled in dance. She was not as much of a discipline problem after she became involved in the activities. One of her major problems was learning the words to songs. As the program progressed, however, she gained confidence and did improve and learned some of the words to many songs. After she realized some success, she would always attempt to learn the words to songs thereafter. Although she was not ever completely successful at learning the words, she always seemed to enjoy trying and participating.

Social and Emotional Classroom Behavior. It was the opinion of the classroom teacher that the subject made improvement in all four areas on the teacher rating scale. Improvement was demonstrated in classroom activities, personal health habits, physical education participation, and social development.

In the area of classroom activities the subject made a marked improvement in following directions. As the program progressed, the subject was not as easily distracted and made improvement in completing assigned tasks.

In personal health habits the subject was lacking but made improvement in one area. She exhibited that she improved in keeping materials and personal belongings in neater arrangement.

In physical education participation, the subject exhibited an improvement of coordination in large muscle activity, and she participated

more enthusiastically in physical activities as the program progressed. There was also an improvement in balance and body control.

Finally, in the area of social development Dana gained self confidence and became more independent in initiating activity.

CASE VI

Background Information. Pat was an eleven-year-old male with an I.Q. of 57 and a mental age of six years seven months.

A medical evaluation yielded evidence of possible organic brain damage and perceptual dysfunction. The child was also diagnosed as having some tendency to be hyperactive and disoriented. He appeared to be a very nervous child and experienced developmental delays. He did not walk until he was three years old and was toilet trained at the age of five.

The subject was referred because of poor academic performance and behavior problems. He repeated the first grade and experienced much difficulty in the second grade. Pat lived at home with his natural mother and father and three other siblings. There was evidence of a poor father-son relationship. It was reported that he received physical abuse at home from the father.

The subject was reported to be very aggressive and sometimes hostile toward others. He was reported to be socially withdrawn. He had the ability to generalize, but lacked the ability to deal with abstract concepts. He appeared to have a restricted vocabulary. Pat

was reported to be emotionally well-adjusted in view of his home and family situation.

Purdue Perceptual-Motor Survey. On the initial testing of the Purdue Perceptual-Motor Survey the subject was highly distractable. However, rapport was easily attained as the subject was quiet and cooperative throughout testing. Pat was enthusiastic, persistent, and eager to continue once he had begun an activity. It was noted that one of Pat's major difficulties was that of following directions. He repeated most instructions to be certain that he was performing correctly. His total score on the initial evaluation was 54, 11 points below the cut-off between achievers and non-achievers.

Indications were that problems existed in the areas of body image, balance, and differentiation. Performance was near adequate on the symmetrical and asymmetrical hopping patterns with only slight deviations.

Performance was adequate in the area of perceptual-motor matching with only a slight indication of some mid-line problems.

Major problems were encountered in both the areas of ocular control and form perception.

Pat was pleasant and cooperative throughout the final testing on the Purdue Perceptual-Motor Survey; yet, he exhibited distractability and could only follow simple directions. His final score was 59, an increase of five points. This score lies only six points below

the cut-off between the achievers and non-achievers.

Indications were that improvement had been made in the areas of body image, balance, and differentiation. Performance was the same in the symmetrical and asymmetrical hopping patterns with only slight deviations being evident.

Performance was adequate in the area of perceptual-motor matching with a slight indication of some mid-line problems.

Marked improvement was made in the area of ocular control; however, form perception continued to be poor.

Perceptual-Motor and Music Programs. Pat was a very apprehensive child who was suffering from emotional conflict and social maladjustment. His perceptual difficulties, distractability, and hyperactivity contributed greatly to this maladjustment. In the beginning of the program, Pat's social problems were evident in that he appeared unhappy and could not relax within the group. Pat was apprehensive and did not interact readily with others. He was usually hostile toward others and would frequently engage in fights. The subject was also deceptive in that he would usually start trouble when the teacher was not looking. When the teacher's attention was drawn, he would immediately correct himself. During the seventh week of the program, Pat began to exhibit improvement in social behavior. He began to smile more frequently, and it appeared that he began to relax within the group. He showed that he was gaining confidence

and was interacting more readily with others. He also volunteered to perform before the group, something very unusual for Pat.

Nonetheless, his erratic and devious behavior continued. Even though he was demonstrating signs of making improvement, he continued to have occasional tendencies to be disruptive. He continued to pick at others and would occasionally fight. Finally, during the twelfth week, Pat exhibited marked improvement in behavior. He suddenly became more interested in the activities and the program. He was no longer disruptive and did not exhibit as much hostility toward others. Pat had commented during the early weeks of the program that he did not like school. During the twelfth week he stated to the investigator, "I can't wait until tomorrow."

In consideration of the development of the perceptual-motor skills, Pat was a most interesting case. At the beginning of the program, he was lacking in the most basic locomotor patterns of galloping and skipping. Yet, he possessed a high degree of skill in hand-eye coordination and ball handling skills. His overall ability to move and learn new skills appeared to be adequate. Marked progress was noted in that he quickly learned to gallop and readily improved in skipping. Rapid progress was also made in the areas of laterality, directionality, and body image. Pat's favorite activities were the beanbag and ball activities. He could dribble a ball skillfully, and he enjoyed demonstrating that he could dribble behind his back and between the legs with either hand. Pat also excelled on the modified

trampoline. He quickly learned the basic stunts and was anxious to attempt new ones. He learned to do a knee drop, seat drop, and a jump with a full turn. The most positive sign was the increase in the subject's enthusiasm and his eagerness to return each day.

In the beginning of the music program, Pat was not very responsive and had difficulty in learning the words to songs. During the third week he began to be more expressive and made improvement in learning the words. It also was apparent that he was beginning to feel more comfortable within the group. By the fifth week the subject was exhibiting even more progress; however, he was still experiencing difficulty learning words. Pat's behavior became much more consistent during the last weeks of the program. He did his best in the music activities requiring movement. At the end of the program, Pat was still having difficulty learning words to songs. Yet, he was trying hard and appeared to be enjoying the music activities thoroughly.

Social and Emotional Classroom Behavior. It was the opinion of the classroom teacher that improvement was made in all four areas on the teacher rating scale. It was also observed that regression occurred on some items in the various areas.

In the area of classroom activities improvement was made in giving appropriate responses and remembering things. It was also observed that form and organization improved on written tasks, and the subject exhibited more of an eagerness to get to school each

morning. The subject also became a bit more relaxed. On the other hand, it was noted that Pat regressed on completing assigned tasks.

Marked improvement was demonstrated in the area of physical education participation. There was an improvement of coordination in large muscle activities as well as in hand-eye and foot-eye coordination. It was also observed that the subject improved on balance and body control.

In the area of social development, Pat exhibited an improved body image. He gained confidence and began to interact more readily with the peer group. It was noted, however, that the subject's hyperactive behavior worsened rather than improved. This is a reaction that is common in brain damaged children, probably because of the excitement of anticipating special events. Also, in some cases it was expected that it would require some time for them to tune down after returning to the classroom.

CASE VII

Background Information. Carlos was an eleven-year-old male with an I.Q. of 71 and a mental age of seven years eight months.

A maternal history of edema during pregnancy was reported. A medical impression was taken when the child was seven years old. The diagnosis was that Carlos possessed an intelligence disorder which was classified as minimal cerebral dysfunction. He also had a mild hearing loss in the left ear. The subject was referred to the

Auburn University Reading Clinic for further evaluation.

The subject had a history of academic difficulty. He spent one year in kindergarten and attended regular classes in the first grade. His academic report revealed poor school progress and destructiveness; and he was classified as having a poor memory. His speech was rated as immature. The subject was referred to Children's Center in May of 1967. A psychological evaluation was administered to Carlos and minimal brain damage was diagnosed. It was projected that the subject possessed basically average intelligence, but functioned lower at times. He was recommended for special education classes. Carlos lived with both natural parents and one sibling, an older brother. It was reported that he was doing satisfactorily in academics since being placed in special education.

Purdue Perceptual-Motor Survey. Rapport was easily attained with the subject on the initial Purdue Perceptual-Motor Survey. He was very attentive and could comprehend extended directions. He was pleasant and cooperative during testing and appeared especially to enjoy the individual attention. His total initial score was 59, just six points below the cut-off between achievers and non-achievers.

Only slight deviations were indicated in the area of balance and posture. There also was evidence of minor problems in laterality and differentiation. The subject could not skip adequately as he substituted a run and hopping pattern for the skip. A temporal lag was also

evident on the symmetrical and asymmetrical hopping patterns.

In the area of perceptual-motor matching, there was evidence of poor directionality and indications of a slight mid-line problem.

Scores were relatively high in the areas of ocular control and form perception; yet, there was evidence of some minor difficulty in both areas.

On the final administration of the Purdue Perceptual-Motor Survey the subject was very attentive and rapport was easily attained. The subject could comprehend extended directions. He appeared to be very relaxed and was pleasant and cooperative throughout testing. His final score was 70, an increase of 11 points. This score lies five points above the cut-off between achievers and non-achievers.

There was no evidence of any problems in the areas of laterality, body image, and directionality. Performance was also adequate on the symmetrical and asymmetrical hopping patterns.

There was also no evidence of any problems in the areas of perceptual-motor matching and ocular control. Some minor difficulties in form perception remained, however.

Perceptual-Motor and Music Programs. During the early stages of the program, Carlos exhibited behavior that pointed toward social maladjustment and emotional deviations.

Carlos appeared to possess a poor self concept, lacked confidence in his abilities, and was completely disinterested in the

program. He demonstrated this by standing to the side with arms folded and stating, "I don't care anything about that silly stuff." It appeared that Carlos could not relax within the group, and he did not interact readily with others. It was not until the third week that Carlos began to show any interest in the program. Then, for the first time, he became interested in a game that was played, and he also asked if he could play a record during the music activities. During the fourth week, he began to appear happier and more relaxed. He appeared to be gaining some confidence and began to take part in the activities. This was the first time that he did not state, "I want to get out of here!" In the seventh week, it was observed that Carlos was improving steadily in behavior. It appeared that he felt more a part of the group. He volunteered for an activity, exhibiting that he was improving self concept and gaining confidence. Yet, the subject continued to exhibit erratic behavior. Occasionally, there would be a day when he was completely uncooperative. He would be disruptive and occasionally picked at others. Yet, the subject continued to make improvement in social behavior through the last weeks of the program.

Carlos made improvement in several areas in the development of perceptual-motor skills. In the beginning of the program, he was lacking in even the very basic locomotor skills. He could not skip and the hopping and galloping patterns were poor. However, he learned to skip readily and the hopping and galloping patterns improved quickly with practice. At the beginning, skills of laterality, directionality,

and differentiality were poor also, but the subject made rapid and marked progress in these areas also, as was demonstrated in the movement exploration activities. The areas in which Carlos probably made the most marked progress were those of hand-eye coordination and ball handling skills. In a matter of days, his performance went from poor to good in those areas. He rapidly advanced to tossing and catching beanbags and balls while balancing on a balance board. The subject especially enjoyed the activities of tossing beanbags and balls into barrels. Carlos especially enjoyed and improved in balance and airborne activities. He made rapid progress on both the balance beam and the modified trampoline. The subject quickly learned the basic stunts on the trampoline and enjoyed this activity as much as any in the program.

In the beginning of the music program, Carlos appeared to be completely disinterested. He would sit behind the group and refuse to participate. It was during the third week that Carlos began to take part in the activity. During this time, he requested that a record be played for him. This appeared to be the key to opening Carlos up. It was later found that he had a wide collection of records at home and playing them was his favorite past time. The music instructor allowed him to bring some records from home and play them for the group. It appeared to be at this point that Carlos had found something. He appeared to begin to gain confidence; he smiled more frequently, and began to interact with others readily. However, his behavior

continued to be inconsistent. He would still occasionally have a bad day. He would be uncooperative, disruptive, and even belligerent at times. However, he demonstrated through the final weeks of the program that much progress had been made socially. He became more relaxed and confident. He volunteered to perform before others and exhibited that he felt that he was an accepted member of the group.

Social and Emotional Classroom Behavior. It was the opinion of the subject's classroom teacher that he made improvement in three of the four areas on the teacher rating scale. Improvement was made in classroom activities, physical education participation, and social development. No progress was made in personal health habits; however, ratings were generally high on all items in this area.

In classroom activities Carlos demonstrated after the second week that he enjoyed school more. He also exhibited an eagerness to get to school each morning. The ratings were consistently high on all other items in this area.

In the area of physical education the subject exhibited improved sportsmanship and an improved general attitude about physical activity.

In the area of social development, Carlos became more receptive to constructive criticism and began to appear happier. Finally, he did not explode under stress as frequently as in the beginning of the program.

CASE VIII

Background Information. Rob was a nine-year-old male with an I.Q. of 71 and a mental age of six years eight months.

The subject's natural mother had a pregnancy of usual length with no problems reported throughout. At the age of four years, the child had a febrile illness ushered in by a questionable convulsion. Rob had a history of speech difficulties. In 1967, at the age of five years, he was evaluated for speech. It was projected that the speech difficulties were caused by mild brain damage. Also, a history of hyperactivity indicated brain damage.

The subject was referred to Children's Center in 1968. The reasons stated were speech and learning problems. Rob began the first grade in normal classes; however, he was dismissed from public school after five weeks because of behavior. He was evaluated and special education classes for the educable mentally retarded were recommended. It was reported that progress had been satisfactory in the special education classes.

Purdue Perceptual-Motor Survey. The subject exhibited a distractable behavior on the initial administration of the Purdue Perceptual-Motor Survey. However, the subject was quiet and rapport was easily attained. Rob could only follow simple directions and motor coordination was rated below average. He responded to praise and was cooperative throughout testing. His initial score was 61, only

four points below the cut-off between the achievers and non-achievers.

There were indications of some definite problems in the areas of balance, laterality, and differentiation. Movement was slow and deliberate and a temporal lag was evident in the hopping patterns. There were also indications of poor body image as the subject could not locate some of the body parts.

In the area of perceptual-motor matching, there was evidence of directionality and mid-line problems.

There was no indication of any problems in the areas of ocular control and form perception.

On the final administration of the Purdue Perceptual-Motor Survey, rapport was easily attained with the subject. He did not exhibit a distractable behavior during testing and motor coordination was rated as average. His final score was 73, an increase of 12 points. This score lies eight points above the cut-off between achievers and non-achievers.

There was no indication of any problems in the areas of balance, laterality, and differentiality. Performance was also improved on the symmetrical and asymmetrical hopping patterns. There was also an indication of improvement in body image.

There were no indications of any problems in the areas of perceptual-motor matching, ocular control, and form perception.

Perceptual-Motor and Music Programs. In the beginning of the program, Rob demonstrated that he possessed a poor self concept. Even though he was cooperative and enthusiastic about the program, he projected definite social inadequacies. He lacked confidence in his abilities and could not relax within the group. Also, he did not interact readily with others in the beginning. Inadequacies were especially noted during the third week of the program. Rob was dancing on stage with a group of subjects. He moved to the back of the stage and hid behind the person in front of him. Then during the sixth week, Rob began to show improvement in social behavior. He appeared to be more relaxed, gained confidence, and began to interact more readily with others. As the subject gained confidence, he became more expressive and verbal about the activities. It also appeared that he began to enjoy group activity more and was more open with performance. A most positive sign during the sixth week occurred when the subject volunteered to sing before the group. It was noted that, as Rob gained socially and became more relaxed within the group, his distractability and hyperactivity became greater problems for him. After he began to feel a sense of freedom, much structure was required. He required close supervision; otherwise these problems became too great for him.

In the development of perceptual-motor skills, Rob made marked improvement in several areas. In the beginning, he was lacking in the basic locomotor skills. The skipping and hopping patterns were poor

and he could not perform the gallop. The subject's overall ability to move and learn new skills appeared to be adequate. He readily learned to gallop and the hopping and skipping patterns improved rapidly. In the beginning of the program, Rob possessed poor body image. Also he was lacking in the perceptual-motor skills of laterality, directionality, and differentiality. However, rapid progress was made in these areas as was demonstrated in the movement exploration activities. The balance and airborne activities were Rob's favorites. He especially enjoyed the movement exploration activities involving the large boxes with the geometrical shapes cut in them. Finally, the subject made notable improvement in the areas of hand-eye coordination, foot-eye coordination, and ball handling skills. He was especially proud of the fact that he learned to use his left hand. He would comment often that he could never before throw or catch with his left hand.

In the beginning of the music program, Rob was very quiet and reserved. He seemed interested but was apprehensive about joining in the activities. It was noted that he had much difficulty learning the words to songs once he began to participate. Rob never made much improvement on learning words. However, he did gain confidence as a group member and eventually even volunteered to perform before the group. He enjoyed the music activities throughout and appeared to benefit socially from them.

Social and Emotional Classroom Behavior. It was the opinion

of Rob's classroom teacher that he improved in the areas of: (1) classroom activities, (2) personal health habits, and (3) social development. In the area of physical education participation he received the highest ratings possible on all items throughout the program.

In the area of classroom activities, the subject exhibited that he increasingly enjoyed school more. He made improvement in following directions and making appropriate responses. Also the subject became less distractable and remembered things better toward the end of the program. Finally, after the second week, he exhibited more eagerness to get to school in the morning.

There was improvement on one item only under personal health habits. The subject demonstrated an improvement in his eating habits.

In the area of social development, the subject exhibited an improvement in body image. He gained in self confidence and would more readily initiate independent activity as the program progressed. He appeared happier and did not become upset as easily as he had in the beginning. Finally, toward the end of the program, he could better accept constructive criticism.

CASE IX

Background Information. Christy was a ten-year-old female with an I.Q. of 65 and a mental age of eight years nine months.

The mother of the subject experienced a pregnancy of usual length; however, there were reports of a febrile illness during the

first trimester of pregnancy. There was also bruising of the head at birth. The medical impression recorded was that of an intelligence disorder. The subject had been hospitalized for illness on several occasions. A notable instance occurred when she was three years old; she was hospitalized and vomited for several days and experienced high fever. The mother had had two miscarriages, but there was no history of any familial disease. The mother also stated that the father had kicked the child severely when she was an infant.

The reason for referral was stated as scholastic failure. There was no preschool or kindergarten experience. Christy entered the first grade at the age of six years. She repeated the first and third grades. The subject was evaluated psychologically in May of 1971. She was recommended for special education, to be placed in a class for the educable mentally retarded. It was reported that Christy appeared to be progressing satisfactorily in the special classes.

Purdue Perceptual-Motor Survey. The subject was very quiet ant attentive on the initial administration of the Purdue Perceptual-Motor Survey. Rapport was slowly attained with Christy as she was very apprehensive about the testing situation. Motor coordination was poor and the subject was rated as being hypoactive physically. She was cooperative throughout but appeared to be somewhat withdrawn. Her total score was 60, just 5 points below the cut-off between the achievers and non-achievers.

There were strong indications of problems in the areas of body image, balance, laterality, and differentiality. The subject could not skip and much difficulty was experienced on the hopping patterns.

Only slight difficulty was experienced in the area of perceptual-motor matching. There were indications of some slight mid-line problems.

There were no indications of problems in the area of ocular control. However, in form perception, the drawings were segmented; there were minor distortions of the diamonds; and the figures were markedly smaller than the originals.

The subject was very quiet and attentive on the final administration of the Purdue Perceptual-Motor Survey. Rapport was easily attained with Christy and her attention span was rated as average. She was very pleasant and cooperative throughout testing. Her final score was 66, one point above the cut-off between achievers and non-achievers.

There continued to be evidence of problems in body image. However, much improvement was exhibited in the areas of balance, laterality, and differentiality. The subject had learned to skip and the hopping patterns were much improved.

Only slight difficulty was experienced in the area of perceptual-motor matching. There continued to be indications of some slight mid-line problems.

There were no indications of any problems in the area of ocular

control. Finally, improvement was exhibited in the area of form perception.

Perceptual-Motor and Music Programs. Christy demonstrated that she was one of the most severely disturbed subjects in the program. She exhibited social inadequacy and emotional imbalance. At the beginning of the program, the subject was very quiet and reserved, to the point of being withdrawn. During the first few days of the program she entered the auditorium and sat expressionless, staring into space until spoken to. She appeared to lack confidence and would not interact readily with others. Christy exhibited a very poor self concept. Then during the third week, she began to respond with smiles and actions in the activities; however, this behavior was not at all consistent. She was capable of quickly sinking back into a state of depression and did so quite often. During the fourth week, the subject showed signs of some social progress. She continued to be more expressive, for she would smile and interact with others more readily than in the beginning. Christy appeared more relaxed, began to enjoy all the activities and even asked two questions on the last day of the fourth week. Then during the fifth week, more positive signs of social development were noted. She began to verbalize more about the activities; she had talked very little in the beginning. During the seventh week she even stayed after class one day to talk about Christmas. During the eighth week, the subject volunteered to perform before the group. It was projected at this time that she felt more a part of the group than ever before.

This progress continued through the last weeks of the program with only an occasional sign of depression or a withdrawn state.

It was the opinion of the investigator that Christy's lack of experiences and severe emotional state had impeded much of the progress that could have taken place earlier in life. This was surmised because of the rapid progress she made in many of the perceptual-motor skill areas. At the beginning of the program, her ability to perform the basic patterns of hopping, skipping, and galloping was only fair. However, she made rapid progress in improving these skills. Another area in which the subject enjoyed much success was hand-eye coordination and ball handling skills. These skills were rated as poor in the beginning; however, Christy quickly advanced to some of the more complex skills performed on balance boards and balance beams. The skills of laterality, directionality, and differentiality were also rated as poor in the beginning of the program but improvement was gradually made in these areas. The subject's favorite area of activities by far was the balance and airborne activities. She was more verbal and expressive during the trampoline activities than ever before.

In the music activities, Christy's progress was not as great and was more gradual than that in the perceptual-motor program. This was typical of the children who possessed a poor self concept. They were less likely, for obvious reasons, to sing or to perform before the group. During the fifth week of the program, the subject began to respond and reveal that she was beginning to enjoy the music

activities. During the eighth week, the subject was beginning to learn some of the words to songs. She had become much more enthusiastic and was responding well.

During the ninth week Christy exhibited that she had continued to gain confidence by volunteering to perform before the group for the first time. She continued this gradual pattern of improvement through the final weeks of the program.

Social and Emotional Classroom Behavior. It was the opinion of the classroom teacher that the subject made improvement in only one of the four areas on the teacher rating scale. No changes occurred in the areas of classroom activities, physical education participation, or personal health habits. Progress was shown on one item in the area of social development. As the program progressed, the subject became much more willing to attempt new activities. It was observed by the classroom teacher that the subject often appeared to be in a state of depression. She appeared withdrawn and was not easily motivated to do her work.

CASE X

Background Information. Jess was a nine-year-old male with an I.Q. of 74 and a mental age of six years six months.

The natural mother of the child experienced a pregnancy of usual length with no reported complications during pregnancy. There was

also no history of any familial illness. A medical examination in April, 1970, revealed possible borderline anemia. It was also projected that an intelligence disorder existed with a possible visual-perceptual defect. Also, it was reported that there existed a deficit in visual memory. The child lived with his natural mother and one sibling, a seven-year-old sister. The father was in prison and it was reported that the family visited him often.

Jess' classroom teacher and principal referred him after he repeated the first grade. The reasons given were academic failure and hyperactivity. He was evaluated at Children's Center in May, 1970, and it was found that problems existed in both the visual and motor-perceptual areas. The subject was recommended for special education classes for the educable mentally retarded. He was enrolled at Children's Center in August, 1970, and it was reported that Jess was progressing slowly in academics since beginning the special education classes.

Purdue Perceptual-Motor Survey. Rapport was easily attained with the subject on the initial administration of the Purdue Perceptual-Motor Survey. He was attentive but could only follow simple directions. The subject was very pleasant and cooperative throughout testing and he responded well to praise and encouragement. His total initial score was 40, 25 points below the cut-off between achievers and non-achievers.

Much difficulty was experienced in the areas of balance, body

image, laterality, and differentiation. The subject performed the skip, but movement was halting and stiff.

Also in the area of perceptual-motor matching there was evidence of problems. Directionality was poor and it was apparent on all items that a mid-line problem existed.

Severe problems were exhibited in the area of ocular control. Finally, there were signs of some minor problems in the area of form perception.

On the final administration of the Purdue Perceptual-Motor Survey, rapport was again easily attained. He was also attentive, but could follow only simple directions. He needed praise and encouragement and was cooperative throughout testing. His total post score was 65, an increase of 22 points over the initial score. This score lies only three points below the cut-off between achievers and non-achievers.

Much improvement was exhibited in the areas of balance, body image, laterality, and differentiation. The subject's performance on the skip and hopping patterns was much improved.

There remained evidence of problems in the area of perceptual-motor matching. Directionality was poor and there continued to be evidence of a slight mid-line problem.

There was marked improvement in the area of ocular control; however, there continued to be slight problems here. Slight improvement was also indicated in the area of form perception.

Perceptual-Motor and Music Programs. Jess was one of the most consistent and cooperative of the younger boys. He possessed a pleasant disposition in many ways, yet he exhibited many signs of social maladjustment. It appeared that he possessed a poor self concept and did not interact readily with others. The subject lacked confidence and exhibited that he could not relax within the group. He demonstrated that he was somewhat withdrawn. Jess was very easily influenced and frequently would allow others to get him into trouble. He was not an aggressive child. However, when others picked at him, he would retaliate. He did not know when or where to stop once he started and would eventually require a reprimand from the teacher. He also would occasionally become very upset when others picked at him. During the fourth week of the program, Jess' behavior began to improve steadily. He began to appear happier, was more expressive, and had much less conflict with peers. After the fourth week, he would occasionally have a bad day where he conflicted with others or became upset easily. However, after the ninth week, that type of behavior was virtually nonexistent. Jess was no longer in conflict with others and did not become upset another time throughout the remainder of the program. He seemingly became very involved with all activities. He appeared happier, was more confident, and interacted with others without conflict.

Jess made improvement in many of the perceptual-motor skill areas. However, his progress was slow and any progress was

difficult to detect until about the middle of the program. In the beginning of the program, the subject was lacking in the basic locomotor skills. The running pattern was somewhat awkward. The skipping, hopping, and galloping patterns were also rated as poor. Movement in these patterns was halting and lacked rhythm. These skills were much improved, but not until the latter part of the program. The skills of body image, laterality, directionality, and differentiality were also poor in the beginning. Again, improvement was slow and gradual. Progress was also noted in form perception and again more time was required for Jess to learn the shapes than for most of the other children. Areas in which only slight progress was made were hand-eye and foot-eye coordination. Ratings in the beginning of the program were poor and never exceeded fair. The subject's favorite area and one in which much progress was made was the balance and airborne activities. His favorite activity by far was jumping on the modified trampoline.

From the beginning of the music program, Jess appeared to show an interest even though he was experiencing some behavioral problems; however, even though the interest was there, progress was only slight throughout the music program. The subject had much difficulty in learning words to songs. In activities calling for movement along with music, he was also lacking because of his limited motor ability. Although progress came very slowly for Jess, he maintained a high level of interest throughout the program. His

behavior was much improved toward the end, and he had made some slight performance improvement.

Social and Emotional Classroom Behavior. It was the opinion of the subject's classroom teacher that he made improvement on all four areas of the teacher rating scale. Improvement was made in the following: (1) classroom activities, (2) personal health habits, (3) physical education participation, and (4) social development.

In classroom activities Jess made a marked improvement in his distractability or continuity of effort. Form and organization on written tasks also improved. He also made improvement on completing and not complaining about assigned tasks. Finally, the subject began to exhibit more imagination and appeared less tense as the program progressed.

In personal health habits, Jess improved on one item; he demonstrated that he was not as nervous toward the end of the program as he was in the beginning.

In physical education participation, slight improvement was made in three areas. The subject demonstrated improved coordination in large muscle activities. He also exhibited an improvement on hand-eye and foot-eye coordination. Finally, the subject complained less about having to continue to play.

In social development, it was the opinion of the teacher that after the ninth week Jess showed an improvement in self confidence.

CASE XI

Background Information. Ricky was a nine-year-old male with an I.Q. of 77 and a mental age of seven years five months.

The mother of the subject experienced a pregnancy of usual length. There were no reports of any complications during pregnancy. However, it was reported that birth was delayed while the mother waited for the attending physician. The records indicate that possible brain damage either existed or occurred at birth. Reports also reveal a history of emotional problems in the child and other family members.

Ricky attended one year of kindergarten and was referred by the Admissions, Placement, and Dispensation Committee to the Capitol Heights Special Center in Maryland. Reasons for referral were cited as emotional problems, developmental lags, and a speech deficit. The subject lives with both natural parents and three other siblings. When the family moved from Maryland to Montgomery in 1971, the subject was placed in special education classes at Children's Center. He was functioning in the mild mentally retarded range and appeared to be doing satisfactorily in special education. It was reported that he appeared to be able to adjust to various social groups.

Purdue Perceptual-Motor Survey. Rapport was easily attained and the attention span was average on the initial administration of the Purdue Perceptual-Motor Survey. The subject was very talkative, but he could only follow simple directions. He was pleasant and

cooperative throughout testing. The subject needed praise and encouragement as he attempted to perform the various items. His total initial score was 48, 17 points below the cut-off separating the achievers from the non-achievers.

There were indications of major problems in the areas of balance, body image, laterality, and differentiation. The subject could not skip and major difficulty was experienced on the hopping patterns.

There were also indications that perceptual-motor matching was poor. It was demonstrated that there was a definite mid-line problem.

Also in the area of ocular control, there were some indications of slight problems. Finally, in the area of form perception major problems were exhibited as very low scores were obtained.

Rapport was again easily attained on the final administration of the Purdue Perceptual-Motor Survey. The subject exhibited a distractable behavior and could follow only simple directions. He enjoyed the testing, was eager to continue, and was persistent. His total post score was 61, an increase of 13 points over the initial score. This score lies only four points below the cut-off between achievers and non-achievers.

Improvement was exhibited in the areas of balance, body image, laterality, and differentiation. The subject had learned to skip, but still experienced difficulty on the hopping patterns.

The subject continued to have problems in the area of perceptual-motor matching. Directionality was incorrect and there continued to

be evidence of a slight mid-line problem.

There was marked improvement in the areas of ocular control and form perception. Perfect scores were obtained in ocular control and the subject drew a diamond for the first time on form perception.

Perceptual-Motor and Music Programs. Ricky was one of the most enthusiastic of all participants throughout the program. However, even though the subject was enthusiastic, he exhibited many social and emotional inadequacies. In the beginning of the program, he found it very difficult to get along with others. He always wanted to be "first" and always found it difficult to wait his turn. He appeared unhappy, lacked confidence, and did not interact with others in a positive way. The subject was in almost constant conflict with others. He would take out his frustrations by hitting others and then justify himself by stating, "He hit me first." During the fourth week of the program Ricky began to become more involved in the activities. It was at this point that he began to smile more frequently and began to get along better with others. His behavior was still inconsistent; he occasionally found it difficult to settle down and was very impatient and sensitive. During the tenth week, it was noted that Ricky had made a satisfactory adjustment to the group. He continued to improve through the last weeks of the program and toward the end had made major adjustments in behavior. He had improved on following directions, appeared happier, more confident, and interacted readily with others in a positive

manner. He no longer spent most of his time in conflict with others and temper tantrums were virtually nonexistent.

Ricky made marked improvement in many of the perceptual-motor skill areas. In the beginning of the program he could not perform the skip, and hopping and galloping patterns were rated as very poor. He learned to skip readily and made some improvement on the hopping and galloping patterns. Other areas in which marked improvement was made were balance, hand-eye coordination, and ball handling skills. In the beginning of the program, the subject found it very difficult to stand in one spot and toss a ball or beanbag in the air and catch it. Ricky advanced, however, to tossing and catching beanbags and tossing,bouncing, and catching balls while balancing on a balance board. He became proficient enough to perform these skills with either hand. Ricky's favorite activity was jumping on the trampoline. He learned to perform the basic stunts and made much improvement in the area of balance and airborne activities. Finally, the subject made improvement in form perception. He learned the geometrical shapes and took pride in demonstrating to his aide that he knew them.

In the beginning of the music program, Ricky appeared to be very unsure of himself. He would hold back and it appeared that he could not relax in the group. He experienced much difficulty in learning the words to songs and the other subjects' names in the group. Because of these inadequacies, Ricky chose to be disruptive, picked fights with others, and ran around the room to draw attention. During the middle

and latter weeks of the program, the subject began to make adjustments. He began to try very hard, although he could never learn the words to songs readily. He came to enjoy the music activities thoroughly and put forth maximum effort to achieve.

Social and Emotional Classroom Behavior. It was the opinion of the subject's classroom teacher that he made improvement on all four areas of the teacher rating scale. Improvement was made in the following: (1) classroom activities, (2) personal health habits, (3) physical education participation, and (4) social development.

In classroom activities Ricky made improvement on his distractability or continuity of effort. Form and organization on written tasks also improved. He made improvement in body control as he did not run into objects and people as much as he did in the beginning. Finally, Ricky improved on completing assigned tasks.

In the area of personal health habits, the subject made improvement on one item, that of keeping materials and personal belongings neatly.

In the area of physical education participation Ricky exhibited better hand-eye and foot-eye coordination. He also demonstrated better body balance and control. The subject did not get hurt in physical play as often as in the beginning.

Finally, in social development, the subject projected an improved body image and made an improvement in his hyperactivity.

CASE XII

Background Information. Darrold was a ten-year-old male with an I.Q. of 66 and a mental age of six years six months.

There were no reports of any unusual incidents during the mother's pregnancy. She experienced a pregnancy of normal duration. The subject lived with his mother. The father was an alcoholic and was committed to Bryce's Institute for Alcoholics. Two other siblings have attended Children's Center and one was committed to a state institution for the mentally and physically handicapped.

The subject was referred because of academic difficulty and behavior problems. He completed the first grade in the regular classroom where mental retardation was suspected. He could not keep up with the other children academically; he was hyperactive; there was difficulty in understanding things; and he was reported as having frequent temper tantrums. There were early developmental delays; he walked late and was delayed in speaking full sentences. There was evidence of cerebral dysfunction stemming from the fact that Darrold's vocabulary and visual-motor skills were approximately a year below his overall mental age. It was projected that part of his retardation was possibly a result of environmental deprivation.

Purdue Perceptual-Motor Survey. Rapport was easily attained with Darrold. He was relaxed and very much at ease during the initial administration of the Purdue Perceptual-Motor Survey. He continuously

verbalized about outside activities. His total initial score was 48, 17 points below the cut-off dividing the achievers and non-achievers.

Much difficulty was experienced in the areas of balance, body image, laterality, and differentiation. The subject performed the skip; however, movement was not free and smooth. Major problems were also evidenced on the jumping and hopping patterns.

Perceptual-motor matching was poor. Directionality was poor, and there were signs of a mid-line problem.

Finally, there were signs of major problems in both ocular control and form perception.

The subject appeared much the same on the final administration of the Purdue as he had on the initial administration. He was attentive, but could only follow simple directions. His total post score was 51, an increase of only three points over the initial score. This score lies 14 points below the cut-off of 65 between achievers and non-achievers.

Only slight improvement was exhibited in the areas of balance, body image, laterality, and differentiation. Performance was also somewhat improved on the skip; however, much difficulty was again exhibited on the hopping patterns.

Perceptual-motor matching continued to be poor. There remained a directionality problem and there continued to be signs of a mid-line problem.

Scores were again very low in ocular pursuit; however, there appeared to be a slight improvement in form perception.

Perceptual-Motor and Music Programs. Darrold was a heavy child who possessed a poor self concept and was lacking in physical abilities. He was a very demanding child and found it very difficult to adjust within the group. He exhibited signs of social maladjustment and emotional disturbance. At times Darrold would appear very happy and responded well to the individual attention given him. Darrold appeared to be a basically gregarious person, but simply could not cope with many of the situations with which he was confronted. Much of this was attributed to the lack of a male figure in the home for the boy to relate to. Through much of the program, he especially found it difficult to do such things as wait his turn, follow directions, and accept constructive criticism. Through the first weeks of the program, Darrold was frequently in conflict with others, had temper tantrums; and if nothing else worked, he would withdraw from the group in an attempt to gain attention. He was rather large for his age and tended to bully others at times. Finally, during the ninth week, there began to be evidence of improvement in the subject's behavior. Although slight improvement was made, the subject continued through the last weeks of the program to exhibit major problems in social adjustment and emotional stability.

Darrold made only slight improvement in the development of perceptual-motor skills. He was lacking in the basic locomotor patterns of hopping, skipping, and galloping in the beginning of the program and made very little progress throughout. The skills of

body image, laterality, directionality, and differentiality were also poor. Again, very little progress was made in these areas throughout the program. Darrold had much difficulty in performing any of the hand-eye and foot-eye coordination activities. Although he experienced this difficulty, he maintained an interest in the activities and continued to put forth effort throughout the program. In fact, Darrold was over confident for an individual with his abilities. He especially enjoyed the balance and airborne activities as did most of the other children. He was highly motivated by the modified trampoline and as a result made some slight progress in this area.

Even though Darrold experienced the behavior problems, he appeared to enjoy the music activities thoroughly. His behavior was much the same as in the perceptual-motor program. He was in frequent conflict with others, did not follow directions, could not wait his turn, and exhibited temper tantrums and a lack of self control. The subject had much difficulty learning words to songs throughout the program. He was also lacking in the music activities calling for movement because of his limited motor ability. Although Darrold maintained a high level of interest throughout the program, very little progress was made in performance. The subject also continued to exhibit major behavioral problems throughout the program.

Social and Emotional Classroom Behavior. It was the opinion of the subject's classroom teacher that he made improvement on all

four areas of the teacher rating scale. Improvement was made in the following: (1) classroom activities, (2) personal health habits, (3) physical education participation, and (4) social development.

Darrold demonstrated improvement in following directions as observed in classroom activities. Also as the program progressed, he appeared less tense and complained less about assigned tasks.

In the area of personal health habits the subject made improvement in arrangement of materials and care of personal belongings.

In physical education participation, the subject demonstrated improvement on several items. He began to participate more enthusiastically in physical activities, improved in sportsmanship, and generally developed a better overall attitude toward activity. He also made a slight improvement in coordination, including large muscle activities and hand-eye, foot-eye coordination. Finally, the subject exhibited a slight improvement in balance and body control.

In the area of social development, the subject interacted more readily with his peers and began to initiate independent activity. It was observed that Darrold did not become upset as easily as in the beginning and made an improvement in accepting constructive criticism. He began to appear happier, complain less, and get along better with others than he had at one time. By the end of the program, he was not as apt to explode under stress and had made improvement in not taking things that did not belong to him.

CASE XIII

Background Information. Sherry was a ten-year-old female with an I.Q. of 58 and mental age of six years two months.

The records revealed a history of marital discord and mental retardation within the family. There were seven siblings in the family with three of them having been referred to Children's Center for psychological evaluations. The mother died in 1969, and the children were placed in a Children's Home. They have since been dispersed into foster homes.

Sherry was referred because of developmental delays. She was slow in learning to walk and talk. She attended one year of Headstart and was tested in August, 1968. A severe articulation disorder was manifested with strong evidence of brain damage. She was functioning within the mild mental retardation range. Visual-motor perception skill was slightly above her overall mental age. She demonstrated poor organization and a low frustration tolerance. She was placed in special education classes for the educable mentally retarded. She appeared to be progressing satisfactorily in academics. The classroom teacher reported that she appeared to be withdrawn from her classmates except for one girl friend.

Purdue Perceptual-Motor Survey. Rapport was easily attained and the subject was quiet and attentive on the initial administration of the Purdue Perceptual-Motor Survey. She appeared to be rather

withdrawn and could follow only simple instructions. The total initial score was 38, 27 points below the cut-off between achievers and non-achievers.

Severe problems were exhibited in the areas of balance, body image, laterality, and differentiation. The subject performed the skip, but movement was not free. Major difficulty was exhibited on the jumping and hopping patterns, with a temporal lag being evident. The subject did not know the body parts.

Performance was very poor in the area of perceptual-motor matching. Problems were exhibited in directionality, and there was also evidence of a mid-line problem.

Severe problems were also indicated in the areas of ocular control and form perception.

Sherry's total post score on the Purdue was 52, an increase of 14 points over the initial score. This score lies 13 points below the cut-off between achievers and non-achievers.

Much improvement was exhibited in the areas of balance, body image, laterality and differentiality. The subject's performance on the skip and hopping patterns was much improved and she had learned the body parts.

There continued to be problems in the area of perceptual-motor matching. Directionality continued to be poor, and evidence of a mid-line problem remained.

There also continued to be evidence of problems in the areas of

ocular control and form perception. However, organization was improved in form perception.

Perceptual-Motor and Music Programs. Sherry was one who made marked improvement in behavior and social adjustment. She also progressed in many of the performance areas, but progress here was not as marked as in the behavior. In the beginning of the program the subject appeared very quiet and reserved to the point of being withdrawn. It appeared that she possessed a poor self concept, could not relax, and lacked confidence in her abilities. During the fourth week of the program the subject began to exhibit some signs of social development. She began to smile and be more expressive in the activities. She appeared more eager to participate in the activities and was less fearful of failure. As the program progressed, Sherry appeared to feel more a part of the group and began to interact more readily with others.

Sherry made marked improvement in many of the perceptual-motor skill areas. In the beginning of the program the skills of laterality, directionality, and differentiality were very poor. However, it was demonstrated in the movement exploration activities that rapid progress was made in the improvement of these. The basic locomotor patterns of hopping, galloping, and skipping were also poor in the beginning. It was demonstrated by the subject that progress was made on these and other locomotor patterns. Improvement and gain was

also made in form perception. Sherry learned the shapes and became rather verbal and expressive during the form perception activities. Another area where satisfactory progress was made was hand-eye, foot-eye coordination. Finally, progress was made in the balance and airborne activities. This was an area which the subject enjoyed and in which she gained confidence.

Sherry did not show a great interest in the music activities in the beginning; however, she appeared to gain confidence rapidly and to become more interested in the music activities as the program progressed. She had much difficulty in learning words to songs. She was also very limited in the music activities calling for movement. With these limitations, however, the subject maintained a high level of interest and appeared to enjoy the music activities thoroughly. She gained confidence enough to volunteer to perform before the group. She enjoyed the group activity and appeared to begin to look forward to the daily sessions.

Social and Emotional Classroom Behavior. It was the opinion of the classroom teacher that Sherry improved in two of the four areas on the teacher rating scale, classroom activities and social development.

In classroom activities the subject improved in giving appropriate responses and showing imagination. As the program progressed, she also exhibited slight improvement in remembering things.

In personal health habits no improvement was shown. Sherry was a very neat and meticulous individual and left no room for improvement.

According to the teacher, no progress was shown in the area of physical education participation.

Finally, in the area of social development there was an improvement in self confidence and initiating independent activity. As the program progressed, the subject also began to interact more readily with others.

CASE XIV

Background Information. Wendy was an eleven-year-old female with an I.Q. of 67 and a mental age of seven years four months.

The natural mother of the child experienced a pregnancy of usual length with no reported complications during pregnancy. There were no reports of a history of any familial illness. The subject lived with her natural parents and seven siblings. It was projected that much of her intellectual problems could be attributed to environmental deprivation. The subject was given a medical examination in 1968. There were no apparent physical anomalies, but there was evidence of mild cerebral dysfunction.

Wendy had a poor academic history; she repeated the first and second grades. She was referred to Children's Center in 1968 because of poor academic performance. She was tested psychologically and

placed in special education classes for the educable mentally retarded. It was reported that Wendy was progressing satisfactorily in the special classes. Socially, the report stated that she was neither over friendly nor hostile. She frequently appeared to be somewhat withdrawn.

Purdue Perceptual-Motor Survey. Rapport was rather slowly attained with the subject as she appeared to be quite apprehensive about the testing situation. Her total score on the initial administration of the Purdue Perceptual-Motor Survey was 43. This score lies 22 points below the cut-off between achievers and non-achievers.

Major problems were exhibited in the areas of body image, laterality, and differentiation. However, the subject possessed good balance and body control. She performed the skip and jumping stunts easily. Much difficulty was experienced on the symmetrical and asymmetrical hopping patterns with confusion, hesitation, and a temporal lag being evident.

Perceptual-motor matching was also poor. Directionality was lacking and there were definite signs of a mid-line problem.

Major problems were exhibited on each item in the area of ocular pursuit. The lowest scores possible were attained.

Finally, there were some major problems experienced in the area of form perception. The figures were segmented and there were minor distortions in the diamonds; however, organization was good.

Rapport was more easily attained on the final administration of the Purdue than on the initial administration. The subject was quiet but attentive and could follow only simple directions. Her total post score was 59, an increase of 16 points. This score lies six points below the cut-off between achievers and non-achievers.

Marked improvement was noted in the areas of body image, laterality, and directionality.

There was also a marked improvement in the area of perceptual-motor matching. Directionality was satisfactory and there was no longer any evidence of a mid-line problem.

In the area of ocular pursuit, major difficulty continued to be exhibited. The lowest possible scores were again attained on each item in this area.

There was some slight improvement in the area of form perception. The diamonds were more recognizable and there was less segmenting in the drawings.

Perceptual-Motor and Music Programs. Wendy was a very interesting subject in that she possessed adequate physical abilities, yet her self concept was surprisingly low. In the beginning of the program, she exhibited a lack of social adjustment. She lacked confidence, did not appear happy, and did not interact readily with others. It appeared that she could not relax and held little enthusiasm for the program. During the fourth week of the program, it appeared that Wendy had

begun to relax somewhat. She began to exhibit more expression toward the activity and others, and occasionally smiled. During the sixth week of the program, the subject began to show more enthusiasm for the program and continued to make improvement in other social areas. Before the sixth week she had been completely non-verbal about the activities. At that point, she began to verbalize and interact with others a bit more. Wendy found security in a girl friend during the program. They were always together, unless separated by the teacher for an activity. Wendy was easily influenced and would sometimes allow her friend to get her into trouble. The subject continued to improve and make adjustments socially throughout the remainder of the program. By the end she was laughing frequently and interacted readily with others. She was much more expressive, relaxed, and felt that she was a part of the group.

In the beginning of the program, Wendy was probably one of the more physically capable students, but she was lacking in some of the perceptual-motor skill areas. She exhibited an adequate development of the basic locomotor skills of skipping, hopping, and jumping. The subject performed better than both boys and girls in these areas. Yet, in the perceptual-motor skills of laterality, directionality, and differentiality, she experienced difficulty. She demonstrated a slight, but very slow gain, in these areas during the movement exploration activities. Progress was also noted in the area of form perception, but again the progress was gradual. After several weeks of the program,

the subject exhibited that she had learned most of the basic geometrical figures. In the areas of balance, hand-eye coordination, foot-eye coordination, and airborne activities the subject excelled and was far ahead of the other boys and girls in these areas.

The subject's behavior during the music program followed about the same pattern as it did in the perceptual-motor program. In the beginning, she lacked enthusiasm, lacked self confidence, appeared unhappy and did not interact readily with others. She had much difficulty learning words to songs. In music activities calling for movement she excelled. She could express herself through movement much more adequately than she could verbally. For that reason, she was especially interested in dance and that appeared to be one of the keys to her making major social adjustments. Wendy even volunteered to sing before the group in the seventh week. She did not do very well, but she had developed enough confidence to volunteer. Toward the end of the program, Wendy appeared happy, was more expressive and verbal, and held much enthusiasm for the program. She appeared to enjoy participation and interacted readily with others.

Social and Emotional Classroom Behavior. It was the opinion of the subject's classroom teacher that she made improvement on all four areas of the teacher rating scale. Improvement was made in the following: (1) classroom activities, (2) personal health habits, (3) physical education participation, and (4) social development.

In the area of classroom activities, Wendy demonstrated a marked improvement in the enjoyment of school as the program progressed. Improvement was also made in following direction, form and organization on written tasks, and demonstrating imagination. As the program progressed, the subject was not as easily distracted and became much more relaxed. Finally, she began to exhibit a recognizable eagerness to get to school each morning.

In personal health habits, Wendy improved in personal appearance and also demonstrated a positive change in eating habits.

In physical education participation, the subject improved in hand-eye and gross motor coordination and demonstrated better balance and body control. The teacher also observed that Wendy exhibited an improved attitude toward school and her classmates.

Finally, in the area of social development the subject made a marked improvement in self confidence and interacted more readily with peers. She also began to appear happier and could accept constructive criticism much better.

CASE XV

Background Information. Candy was a ten-year-old female with an I.Q. of 54 and a mental age of five years seven months.

The mother of the subject experienced a full term pregnancy with no complications. However, the delivery was by Caesarean section after a period of very hard labor. There was no reported history of

any familial illness. The subject suffered from severe alternating medial strabismus. The mother reported developmental delays in the child. She walked late and did not speak single words until she was three and one half years old. The child lived with both natural parents and one other sibling, a younger brother.

Candy began her formal school experiences by attending kindergarten at the Retarded Children's School. She was referred to Children's Center at the end of the first year in kindergarten. She was evaluated and placed in special education classes for the educable mentally retarded. The evaluation yielded evidence of organic brain damage associated with massive spasms. Reports were that she was progressing slowly in academics in the special education classes. She appeared very happy and was liked by her peers.

Purdue Perceptual-Motor Survey. Rapport was easily attained with the subject on the initial administration of the Purdue Perceptual-Motor Survey. She was very talkative, and it was noted that she was highly distractable. Her total initial score was 41, 24 points below the cut-off between achievers and non-achievers.

Much difficulty was experienced in the areas of balance, body image, laterality, and differentiation. The subject substituted a gallop for the skip and was also inadequate on the symmetrical and asymmetrical hopping patterns.

Major problems were also exhibited in the area of perceptual-

motor matching. Directionality was incorrect, and there were definite indications of a mid-line problem.

Severe problems also were indicated in the area of ocular control. The lowest possible score was attained on each item. Finally, major problems also were apparent in the area of form perception.

On the final administration of the Purdue Perceptual-Motor Survey, rapport was again easily attained. The subject continued to be talkative and exhibited a very distractable behavior. She could hardly follow even the simplest directions. However, she was smiling and pleasant throughout testing. Her total post score was 46, an increase of five points over the initial score. This score lies 19 points below the cut-off between achievers and non-achievers.

No measurable improvement was exhibited in the areas of balance, body image, laterality, and directionality.

There also remained evidence of problems in the area of perceptual-motor matching. Directionality continued to be poor and there remained an apparent mid-line problem.

Major problems also continued to exist in the area of ocular control. Finally, there was some slight improvement in form perception, although problems continued to be evident.

Perceptual-Motor and Music Programs. Candy was a very unusual subject in that her self concept was very high in spite of her physical and mental problems. She apparently was not fully aware of her limitations

in relation to her lack of abilities. The subject appeared to be fairly well adjusted socially. She was consistently happy throughout the program. She appeared relaxed and interacted readily with others. The most unusual characteristic about Candy was that she was highly distractable but always seemed to be aware of what was going on. She could not follow directions, yet she was aware of what everyone in the room was doing. She was not always cooperative; at times, she wanted to do what she wanted to do and to do it her way. However, this improved somewhat as the program progressed.

Candy made very little progress in the perceptual-motor skill areas. Much of the progress she may have made was impeded by a severe visual perceptual impairment; however, she did make some improvement in the basic locomotor patterns. It was apparent that she gained slightly in body control and gross motor ability. Also because of her visual handicap, only slight progress was noted in the areas of hand-eye coordination and ball handling skills. Yet, she appeared to enjoy all activities thoroughly and was always anxious to perform. The subject seemed to have good memory and made progress in the area of form perception. She learned and remembered the geometrical shapes. She thoroughly enjoyed the balance and airborne activities. Her favorite activity was bouncing on the modified trampoline. Here again she was very limited because of her weight and her visual problem. Regardless of these handicaps, she was enthusiastic and made some slight progress in performance.

Candy was enthusiastic and enjoyed the music activities to the utmost from the very beginning of the program. She could readily remember the words to songs and she could follow the music activities without any problem. She was, of course, hampered in activities calling for movement. Nonetheless, she was very enthusiastic and anxious to try them all. She loved to dance and perform before the group even though she was very limited physically.

Social and Emotional Classroom Behavior. It was the opinion of the subject's classroom teacher that she made improvement on two of the four areas on the teacher rating scale. Improvement was made in the areas of physical education participation and social development.

In the classroom activities, there were many problem areas, but the subject made no apparent progress throughout the program.

In the area of personal health habits there were also some areas that were lacking, but again no apparent progress was made.

However, in the area of physical education participation, the subject exhibited improved sportsmanship and, as the program progressed, began to participate more enthusiastically in physical activities. The subject also exhibited an improved general attitude about physical education and complained less about having to play.

Finally, improvement was shown in the area of social development. The subject became more willing to attempt new activities and began to interact more readily with peers. The subject also became

more capable of initiating independent activity.

CASE XVI

Background Information. Brenda was a nine-year-old female with an I.Q. of 71 and a mental age of six years eight months.

Although the subject was born prematurely, there were no problems reported during the pregnancy; and the mother reported no developmental delays in early childhood. There was a record of a family history of marital discord and mental retardation. There were seven siblings in the family, five of whom are mentally retarded. The mother died in January, 1969. The children were then placed in a Children's Home and have since been dispersed into foster homes. Brenda lived in a home with three other children in the family.

Brenda was referred to Children's Center after repeating her first year of Headstart. She was tested in August, 1968 and recommended for special education classes for the educable mentally retarded. She was functioning in the mild range of mental retardation. She had been progressing satisfactorily in academics since beginning the special education classes. It was indicated that she had somewhat of an emotional problem, for she was anxious to be reunited with her family and was convinced that this reunion would occur.

Purdue Perceptual-Motor Survey. On the initial administration of the Purdue Perceptual-Motor Survey, rapport was easily attained

as the subject was quite verbal during testing. She could understand only simple directions and responded well to praise and encouragement. Her total initial score was 51, 14 points below the cut-off between achievers and non-achievers.

Slight difficulty was experienced in the areas of balance, laterality, and differentiality. Problems also were encountered on the symmetrical and asymmetrical hopping patterns. Movement was slow and deliberate and a temporal lag was evident.

In the area of perceptual-motor matching, it was apparent that directionality was poor, and there was evidence of a definite mid-line problem.

In the area of ocular control, some problems were evident. Eye movements were somewhat jerky when the subject was tracking with each eye individually. In addition, convergence was impossible at four inches.

Low scores were attained in form perception, indicating an inadequacy in this area.

Rapport was again easily attained on the final administration of the Purdue Perceptual-Motor Survey. However, it was noted that the subject was highly distractable and could not follow even simple directions. She needed constant praise and encouragement and was anxious about success. Her total post score was 50, a decrease of one point as compared to the initial score.

There was no evidence of any improvement in the areas of

balance, laterality, and differentiality. There was also no apparent improvement on the hopping patterns.

In the area of perceptual-motor matching, directionality remained poor and there continued to be evidence of a definite mid-line problem.

Finally, poor scores were again obtained on the ocular pursuit items, and no improvement was marked in the area of form perception.

Music Program. Brenda was by far one of the most cooperative students of any in the entire program; however, from the beginning of the program, she exhibited some signs of social maladjustment. It appeared that she was not relaxed, lacked confidence, and did not interact readily with others. Also in the beginning, she did not appear to be a very happy child. She appeared to be quite nervous and apprehensive. During the fourth week of the program, the subject began to show more enthusiasm for the program. She began to appear more relaxed and confident. She also began to interact with others more readily. She volunteered to sing before the group if someone would sing with her and asked to play the piano for the group. During the fifth week of the program, Brenda volunteered to sing before the group alone. After enjoying this success, Brenda seemed to be more attentive and made more of an effort to follow directions.

Brenda wanted to spend as much time as possible with her sister who was also in the group. The sister lived in a separate foster home and the girls only saw each other at school. According to the records,

this situation had contributed to Brenda's social and emotional problems. She and her sister held hands much of the time and appeared to get along very well. Brenda continued to improve in both performance and behavior through the last weeks of the program.

Social and Emotional Classroom Behavior. It was the opinion of the subject's classroom teacher that she made improvement in three of the four areas on the teacher rating scale. Improvement was made in classroom activities, physical education participation, and social development. The subject was a very neat and meticulous person and left no room for improvement in personal health habits.

In the area of classroom activities, the subject exhibited that she became less tense as the program progressed. She also complained less about assigned tasks, and drawings and paintings were neater.

In the area of physical education participation, the subject demonstrated an improvement in gross motor and hand-eye, foot-eye coordination. She also exhibited an improvement in balance and body control. The subject projected an improved attitude toward physical activity.

CASE XVII

Background Information. Jean was a ten-year-old female with an I.Q. of 58 and a mental age of six years four months.

The subject's mother experienced a full term pregnancy with no complications. The child was delivered by Caesarean section and was reported normal and healthy at birth. Complications began, however, at an early age. The subject experienced recurrent nose and throat infections and had episodes that were suggestive of epileptic seizures. A medical impression was taken in April, 1969, with a diagnosis of "an intellectual disorder." The subject had a history of recurrent seizures and was referred to the Seizure Clinic at the State Crippled Children's Service. It was also recorded that she was taking anti-convulsive medication. There was no family history of any familial illness.

The subject began school at age six and repeated the first grade. She was then referred to Children's Center by her principal because of academic difficulty. The report stated that Jean had a very short attention span and experienced a speech problem, a slight lisp. The psychological evaluation was administered in May, 1969. The subject was enrolled in special education classes for the educable mentally retarded during the summer of 1969. It was reported that the subject was functioning in the range of mild mental retardation and was progressing slowly in the special education classes. The teacher reported that socially Jean was very friendly and usually appeared happy.

Purdue Perceptual-Motor Survey. Rapport was easily attained with the subject on the initial administration of the Purdue Perceptual-

Motor Survey; however, it was noted that she was highly distractable and could not follow directions. It was also observed that she was grossly affected when she did not succeed on a test item. She was initially very interested in the survey; yet, after she had done poorly on a couple of items, she lost interest, gave up easily, and sought to terminate the activities. The subject's total initial score was 51, 14 points below the cut-off between achievers and non-achievers.

There was indication of only slight problems in the areas of balance, laterality, and differentiality. Yet, Jean did project a poor body image, for she did not know all the body parts. She performed the hopping patterns, but experienced some difficulty. Movement was slow and deliberate and a temporal lag was evident.

Major problems were apparent in the area of perceptual-motor matching. Directionality was poor, and there were indications of a mid-line problem.

The subject also experienced major difficulty in ocular control. She moved the head instead of the eyes; eye-movement was jerky; and she lost visual contact with the target during movement. It was apparent that she was highly distractable.

Finally, problems were evident in the area of form perception. There was segmenting of the drawings, and one form was not recognizable. Scores attained in this area were low.

On the final administration of the Purdue Perceptual-Motor Survey, the subject was talkative and continued to be highly distractable.

Even though she could not follow directions, rapport was again easily attained. Her total post score was 53, an increase of two points over the initial score. This score lies 12 points below the cut-off between achievers and non-achievers.

No improvement was apparent in the areas of balance, laterality, and differentiality. The subject also continued to project a poor body image. Jean also continued to experience problems on the hopping patterns.

Performance in the area of perceptual-motor matching remained the same. Directionality was poor and indications of a mid-line problem were apparent.

The subject continued to experience major problems in ocular control; however, there was slight improvement in form perception as all figures were recognizable and organization was good.

Music Program. In the beginning of the music program, Jean was very shy and unsure of herself. She appeared to lack confidence and projected a poor self concept. She smiled and seemed interested in the activities but would hold back. This could have been partly due to her speech problem. It was noted also that she did not interact readily with others. During the fourth week of the program, Jean appeared to gain confidence and enthusiasm for the program. She began to participate and volunteered to perform. It also appeared that her self concept was improving; after a performance, she seemed very pleased

with what she had done and would sit and listen intently to others. The subject was very successful in memory activities. She learned the words to songs readily and enjoyed singing. Jean continued to make progress through the last weeks of the program. At the end of the program, she was confident and had an improved self concept. She acted as a "leader" in group singing and participated readily in group discussions. She seemingly had found that she could do as well as her peers in most activities and was no longer shy, but anxious to perform.

Social and Emotional Classroom Behavior. It was the opinion of the subject's classroom teacher that she made some improvement in three of the four areas on the teacher rating scale. Improvement was shown in classroom activities, personal health habits, and social development. No improvement was shown in physical education participation.

In the area of classroom activities, the subject demonstrated improvement in continuity of effort; and during the twelfth week of the program, she exhibited that she was not as easily distracted as in the beginning.

In personal health habits, Jean showed an improvement in appearance as the program progressed. However, it was noted that she always seemed to have a poor appetite.

No improvement was shown in the area of physical education participation. Ratings were relatively high on all items in this area.

Finally, in the area of social development, significant improvement was shown in only one item. The subject exhibited that she made a marked gain in self confidence.

CASE XVIII

Background Information. Tarra was a ten-year-old female with an I.Q. of 61 and a mental age of six years five months.

The mother of the subject experienced a pregnancy of usual length with no complications during that time. However, it was reported that the child fell and severely injured her head when she was three years old. A medical evaluation was made in May, 1967, and the results indicated "cerebral dysfunction affecting speech and a possible minimal affect on intelligence." An evidence of drooling was indicated also. The subject has been evaluated for speech and hearing at the Central Alabama Rehabilitation Center.

Tarra began nursery school at the age of four and was sent to kindergarten her fifth year. At the end of that year in kindergarten, she was referred to Children's Center because of an observed speech problem, hyperactivity, and temper tantrums. A psychological evaluation was made in May, 1967, and it was found that the child was functioning in the range of mild mental retardation. It was recommended that she be placed in special education for the educable mentally retarded. It was reported that Tarra had progressed slowly in academics since placement in the special classes. Socially she had been somewhat

rejected by her peers; yet, she interacted with others readily and usually appeared happy.

Purdue Perceptual-Motor Survey. Rapport was easily attained with the subject on the initial administration of the Purdue Perceptual-Motor Survey. Although the subject was talkative and highly distractable, she was very interested in all activities. Her total initial score was 40, 25 points below the cut-off separating achievers and non-achievers.

Tarra experienced much difficulty in the areas of balance, body image, laterality, and differentiality. Performance was also inadequate on the hopping patterns, with a temporal lag being evident.

Major problems also were apparent in the area of perceptual-motor matching. Directionality was poor, and there were definite indications of a severe mid-line problem.

In the area of ocular control, it was noted that Tarra was highly distractable. She experienced major difficulty and obtained the lowest possible scores in this area.

Finally, there were indications of some minor problems in form perception. There was segmenting of the figures and minor distortions were found in the diamonds.

On the post administration of the Purdue Perceptual-Motor Survey, the subject was again rated as being highly distractable. She was talkative and could only follow simple directions. Her total post score

was 42, showing an increase of two points.

There was no evidence of any improvement in the areas of balance, body image, laterality, and differentiality. Performance continued to be inadequate on the hopping patterns with a temporal lag still evident.

In the area of perceptual-motor matching directionality remained poor and evidence of a mid-line problem was still apparent.

Very poor scores were obtained again in the area of ocular control; however, a slight improvement was noted in form perception.

Music Program. Tarra was another subject whose self concept and confidence level was high in spite of her ability level. From the beginning of the program, she appeared to be very happy and was overflowing with confidence even though she was very limited in ability. She was enthusiastic, very relaxed, and interacted readily with others. Her coordination was very poor and the basic locomotor patterns were near retarded. The subject made very little progress in these areas throughout the program. She experienced much difficulty in memory activities. Tarra simply could not remember the words to songs in sequence; yet, she would remember some words and say those over and over. She experienced much difficulty in learning her left from her right and could not remember from day to day. Tarra continued to be enthusiastic, but made very little improvement in these areas throughout the program. The subject experienced much difficulty in

following directions. She also was disruptive at times without understanding that she was. She would frequently "interrupt" the teacher to find out when her turn was coming and could not understand why she had to wait. The subject remained enthusiastic, happy, and very confident throughout the program. She could not understand that, at times, she was annoying and disruptive. Finally she was apparently never aware that her performance was inadequate.

Social and Emotional Classroom Behavior. It was the opinion of the subject's classroom teacher that she made improvement in three of the four areas on the teacher rating scale. Improvement was made in the areas of classroom activities, physical education participation, and social development. No progress was noted in the area of personal health habits.

In the area of classroom activities, the subject improved in continuity of effort. She was not as easily distracted toward the end of the program as in the beginning.

In the area of physical education participation, the subject improved in large muscle, hand-eye, and foot-eye coordination. It also was noted that she did not get hurt in physical play as often as before, and she no longer complained about having to play.

Finally, in the area of social development the subject made a marked improvement in self control. She was not as hyperactive as in the beginning, and in the end, she was not as likely to take things

that did not belong to her.

CASE XIX

Background Information. Allain was a ten-year-old female with an I.Q. of 80 and a mental age of seven years eight months.

The subject was born prematurely at seven months, and the mother had experienced illness throughout the pregnancy. The child was delivered by Caesarean section and suffered minimal brain damage and was in poor physical condition for the first year. She spent one week in an incubator. It was reported that the subject cried almost continuously until one year of age. Allain now appears to be in good health, but fatigues easily. The child lives with her natural parents and four other siblings at home.

Allain repeated the first grade and had a history of academic difficulty. Her academic report stated that she had difficulty in memory items, in following directions, in comprehension, and in keeping her head still while reading. Her strongest subject was arithmetic; however, she experienced slow development in speech. Her social report stated that she was well behaved, seemed to be happy and well-adjusted, and was well liked by her classmates.

Purdue Perceptual-Motor Survey. On the initial administration of the Purdue Perceptual-Motor Survey, rapport was easily attained with the subject. She was relatively quiet and possessed an average

attention span. The subject could only follow simple directions. Her total initial score was 61, just four points below the cut-off separating the achievers from the non-achievers.

Only slight difficulty was apparent in the areas of balance, laterality, and differentiality. However, body image was poor, and the subject could not identify all the body parts.

In the area of perceptual-motor matching, some minor problems were apparent. There was an indication of a slight mid-line problem.

In ocular control, scores were perfect except on convergence. The eyes could not converge, with the left eye breaking away.

Scores were also high in the area of form perception. There was a slight discrepancy in that the diamonds had minor distortions.

The subject was attentive and rapport was easily attained on the post administration of the Purdue Perceptual-Motor Survey; however, she still could follow only simple directions. Her total post score was 58, three points less than the initial score. That score lies seven points below the cut-off between achievers and non-achievers.

There was no indication of any improvement on any of the areas on the Purdue Perceptual-Motor Survey. In fact, performance had slightly decreased in the areas of perceptual-motor matching and ocular control. In perceptual-motor matching, a directionality problem was apparent that was not apparent on the initial testing. Some additional problems that were not apparent at the initial testing were also found in ocular control.

Music Program. In the beginning of the program, it was evident that Allain was lacking socially. She appeared unhappy, lacked confidence, and did not interact with others. She also appeared to possess a very poor self concept and seemingly could not relax within the group. The subject appeared to be scared and apprehensive. She commented that she did not want to come if she had to dance. During the fourth week of the program, Allain seemed to begin to relax just slightly. It appeared that she had gained some confidence as she surprisingly asked to perform before the group. She began to show some expression as she occasionally smiled and began to interact with others. Allain began to participate more but continued to appear shy. She experienced much difficulty in following directions and learning words to songs. It was noted during the sixth week that she was progressing satisfactorily, had begun to learn words to songs, and could better follow directions. Even as performance was improving, very little emotion was exhibited. As the program progressed, Allain appeared to have more enthusiasm for the program and exhibited an improved attitude. During the last three weeks of the program, Allain exhibited a marked improvement in self confidence. She enjoyed the group activities and readily interacted with others. Finally, in the end, it appeared that the subject felt very much a part of the group and had made a marked social adjustment.

Social and Emotional Classroom Behavior. It was the opinion

of the subject's classroom teacher that she made improvement in two of the four areas on the teacher rating scale. The subject made improvement in classroom activities and personal health habits. Ratings were exceptionally high throughout the program in both the areas of physical education participation and social development.

In the area of classroom activities, Allain improved form and organization on written tasks and exhibited that she was markedly more relaxed in the end than in the beginning of the program.

In the area of personal health habits, the subject exhibited a neater personal appearance and improved in neatness of materials and care of personal belongings.

CASE XX

Background Information. Ann was an eleven-year-old female with an I.Q. of 67 and a mental age of seven years eight months.

The mother of the subject experienced a full term pregnancy with no complications being recorded. The child had suffered no serious illnesses, convulsions, or injuries in her life time. The subject lived with her natural parents and four other siblings. A medical impression was taken in September, 1970. An intelligence disorder was discovered with the cause unknown. It was projected that socio-cultural factors were probably predominent.

The subject was referred to Children's Center because of academic difficulty. She repeated the first and second grades after

beginning school at the age of six years. A psychological evaluation was given in October, 1970. The subject was found to be functioning in the range of mild mental retardation and was recommended for special education in educable mentally retarded classes. It was reported that Ann was progressing satisfactorily in academics since her placement in special education. The report on social development stated that she lacked respect for adults and her peers.

Purdue Perceptual-Motor Survey. The subject was quiet and attentive on the initial administration of the Purdue Perceptual-Motor Survey. She could only follow simple directions but was eager to continue once she began on activity. Her total initial score was 58, seven points below the cut-off separating the achievers and non-achievers.

Only slight difficulty was apparent in the areas of balance, laterality, and differentiality; however, major problems were apparent on the hopping patterns. Movement was slow and deliberate with confusion and hesitation. The subject also projected poor body image. She did not know all the body parts.

Minor problems were apparent in the area of perceptual-motor matching. A slight mid-line problem was also evidenced.

There were also some minor discrepancies in the area of ocular control. The eyes functioned adequately when working together; however, minor problems were evident as each eye functioned independently.

The subject experienced difficulty in form perception. The lines of the divided rectangle were segmented and "dog ears" were present on the diamonds. Organization of the figures was good; they were arranged from left to right.

Very little change was noted in the behavior of the subject on the post administration of the Purdue Perceptual-Motor Survey. She was attentive and somewhat more talkative than on the initial test. Her total post score was 59, one point above the initial score. This score lies six points below the cut-off separating the achievers and non-achievers.

There continued to be only slight difficulty in the areas of balance, laterality, and differentiality. Major problems continued to be apparent on the hopping patterns. The subject experienced much confusion and hesitation on these items. There was slight improvement on body image. There was some hesitation and inappropriate responses, but the subject corrected them and seemed to know the body parts.

There was some change in the area of perceptual-motor matching. The subject exhibited a directionality problem that she did not have in the beginning. However, the mid-line problem that was evidenced in the beginning was no longer apparent.

Finally, there remained some minor problems in the areas of ocular control and form perception.

Music Program. Ann probably made the most marked

improvement in social adjustment of any child in the entire program. In the beginning of the program she appeared unhappy, lacked confidence, and could not relax within the group. She did not interact readily with others and projected a poor self concept. However, she was cooperative and followed directions fairly well. Ann's performance was good from the beginning. She learned the words to songs readily and usually seemed pleased with her performance. During the fourth week of the program the subject began to make a marked improvement in social adjustment. She appeared much more relaxed, appeared happy and confident, and interacted readily with others. She became very enthusiastic toward the program, and her performance was rated as excellent. This type of behavior and performance continued throughout the remaining weeks of the program. At the end of the program, her ratings were as high as could be attained in both behavior and performance. Ann had become the model student, exhibiting unusual confidence, maturity, and ability.

Social and Emotional Classroom Behavior. It was the opinion of the subject's classroom teacher that she made improvement on two of the four areas on the teacher rating scale. Improvement was observed in classroom activities and physical education participation.

In the area of classroom activities, the subject improved on remembering things. In the beginning of the program, it was noted that Ann was frequently absent; however, as the program progressed,

her attendance improved markedly. Improvement was also exhibited in neatness of paintings and drawings.

No improvement was exhibited in the area of personal health habits. Ratings were generally high throughout the program in this area.

In the area of physical education participation, it was observed that enthusiasm in physical activities improved. This was the only item where improvement was registered in this area; however, ratings were generally high throughout the program on all other items.

There was no improvement recorded by the classroom teacher in the area of social development. The ratings were not especially high throughout in this area as the subject was lacking on many of the items.

CASE XXI

Background Information. Charlotte was an eleven-year-old female with an I.Q. of 68 and a mental age of seven years six months.

The mother of the subject experienced a full term pregnancy with no complications. However, the subject had pneumonia when she was only 17 days old with a recurrence at age three. There was no record of any family history of familial illness. The subject lives with her natural parents and three other siblings, all girls. The mother had had a previous miscarriage in 1957.

Charlotte had a history of academic difficulty. She attended kindergarten and repeated the first grade. She had remedial reading and special tutoring in the third and fourth grades. The subject was referred to Children's Center while in the fourth grade, and she was found to be functioning at the second grade level. A psychological evaluation was given in March, 1971. Charlotte was functioning in the range of mild mental retardation and was placed in special education classes for the educable mentally retarded. Since placement, she had been progressing slowly in academics and appeared withdrawn and passive.

Purdue Perceptual-Motor Survey. On the initial administration of the Purdue Perceptual-Motor Survey the subject was talkative and rapport was easily attained. She appeared to lack confidence and was anxious about most of the activities. Charlotte's total initial score was 63, only two points below the cut-off separating the achievers and non-achievers.

There were some slight problems evidenced in the areas of balance, laterality, and differentiality. There was some confusion and hesitation as the subject performed the hopping patterns. A poor body image was projected as she could not identify the shoulders.

In the area of perceptual-motor matching, some minor problems were apparent. There was a slight indication of a mid-line problem.

Finally scores were perfect in ocular control and very high in the area of form perception.

Rapport was again easily attained on the post administration of the Purdue Perceptual-Motor Survey. Charlotte was again very talkative as she readily shared activities at home. Her total post score was 63, the same as the initial score. There was no change in performance in any of the major areas on the Survey.

Music Program. During the first several weeks the subject showed very little enthusiasm for the program. She lacked confidence and did not interact within the group. She would usually sit quietly beside a friend. Strangely, her performance was very good in most group activities. Yet, seemingly because of her poor self concept, she refused to perform alone in front of the group. She appeared to be very unsure of herself. This behavior probably stemmed from the fact that she had so frequently experienced failure in her earlier school experiences. During the sixth week of the program, Charlotte became a bit more expressive, and she was smiling more frequently and appeared to feel more a part of the group. She began to break away from her friend and interact with others. During the twelfth week, Charlotte exhibited some regression in behavior and adjustment. She appeared to be upset about something as she withdrew for two days. She did not participate in any activities, would not smile, and did not interact with others. Then, after a few days she was performing and

smiling once again. Charlotte was never critical of others, and when she did interact with others she always seemed to get along quite well. The improved behavior continued through the last weeks of the program. In summary, it was interesting to note that many of the children experienced rapid changes in behavior; however, in Charlotte's case the progress was slow and gradual.

Social and Emotional Classroom Behavior. It was the opinion of the subject's classroom teacher that she regressed in all four areas on the teacher rating scale; however, there was progress noted on two items under classroom activities and on one item under social adjustment.

Charlotte became more distractable and more tense as the program progressed. She also began to complain more about assigned tasks; however, she did make some improvement on form and organization of written tasks.

In the area of personal health habits, the subject appeared to become more nervous as the program progressed. The other ratings in this area were generally high.

In physical education participation, the subject grew progressively worse in sportsmanship. The ratings were generally high on the other items in this area.

Finally, in the area of social development the subject appeared to become more fearful of her surroundings; she became more apt to

tell falsehoods and grew progressively worse in taking things that did not belong to her.

The classroom teacher further commented that Charlotte never was apprehensive and always wanted to be first in everything. She also stated that Charlotte was a very hyperactive child and that she looked forward to going to the music sessions each morning and was very eager to participate.

CASE XXII

Background Information. Douglas was a nine-year-old male with an I.Q. of 69 and a mental age of six years eight months.

The subject was brought to his foster mother when four hours old, and no facts concerning the pregnancy or delivery were known. The birth weight was estimated at less than five pounds, and it was suggested that the baby was born prematurely. The medical impression in January, 1970 was "intelligence disorder secondary to encephalopathy of prematurity." The child had a tendency to fall frequently during his early years. He was evaluated by the State Crippled Children's Service and corrective shoes were prescribed.

Douglas was referred to Children's Center by a child welfare consultant in the State Department of Pensions and Securities. The reasons cited for referral were scholastic difficulty and behavior problems. The subject was in the second grade and performing on the first grade level. The subject was tested and placed in special

education classes for the educable mentally retarded. He had progressed slowly in the special classes. He was a very hyperactive child and sometimes demonstrated hostility toward authority. It was also reported that he sometimes abused classmates.

Purdue Perceptual-Motor Survey. On the initial administration of the Purdue Perceptual-Motor Survey it was noted that the subject was highly distractable. He could not follow directions but was persistent and eager to continue once an activity was begun. His total initial score was 45, 20 points below the cut-off separating achievers and non-achievers.

Only slight difficulty was evidenced in the areas of balance, laterality, and differentiality; however, major difficulty was experienced on the hopping patterns. There was confusion and hesitation during performance and a temporal lag was evident.

Douglas also exhibited major problems in the area of perceptual-motor matching. Directionality was poor and there were indications of a definite mid-line problem.

Finally, there were major problems in the areas of ocular control and form perception. Consequently, scores were very low in both areas.

On the post administration of the Purdue Perceptual-Motor Survey, rapport was easily attained. Still, it was again noted that the subject was highly distractable. He could not follow directions and

acted indifferently when he failed a task. His total post score was 45, the same as the initial score. There was no change in performance in any of the areas on the Survey.

Music Program. In the beginning of the program, Douglas was happy and appeared to be very relaxed. He was continuously smiling and always seemed to enjoy the activities. Yet, he was disruptive and somewhat of a behavior problem. He had to be supervised very closely or eventually he would get completely out of hand. The subject appeared to have much difficulty following directions and seemingly would use this disruptive behavior as a "cover up" mechanism. At times he would appear disinterested in what was going on, and again it was felt by the investigator that he was covering up his inability to comprehend directions. Douglas had a close friend in the group and was forever by his side. It was projected that Douglas felt more secure when near his friend. The subject also demonstrated this insecurity by his need for praise and encouragement. It appeared that he was capable of performing adequately in most activities and that his problem was comprehending and following instructions. Factors contributing greatly to his problem of comprehending were his distractability and very short attention span. Douglas was not really a bad child, but the group activity enhanced his hyperactivity and distractability. The subject would have an occasional good day, and when he did comprehend instructions, he displayed a good sense of rhythm

and could learn some of the words to songs. Douglas' behavior began to show some improvement during the eighth week of the program. His progress was slow and gradual, but his behavior was very inconsistent from day to day. During the tenth week, Douglas appeared to become a bit more confident and exhibited more respect for the teacher. He seemed more enthusiastic about the program and appeared to be trying harder to do what was asked of him. His attitude seemed to improve, and he exhibited more confidence by leading the group in a song. During the twelfth week, the subject appeared to be listening better and following directions. As he enjoyed more success in performance, his behavior also seemed to improve. During the last weeks of the program, it was noted that Douglas' behavior was more consistent and that he appeared more attentive and enthusiastic than ever before.

Social and Emotional Classroom Behavior. It was the opinion of the subject's classroom teacher that he made improvement in all four areas on the teacher rating scale. Improvement was made in: (1) classroom activities, (2) personal health habits, (3) physical education participation, and (4) social adjustment.

In classroom activities, the subject improved in following directions, remembering things, and exhibiting imagination. He also demonstrated that he was not as distractable as in the beginning and exhibited improved form and organization on written tasks.

Finally, the subject appeared more relaxed and markedly improved in eagerness to get to school each morning.

In the area of personal health habits, the subject exhibited a neater personal appearance and improved eating habits.

In physical education participation, Douglas showed improvement in balance and body control and also a slight improvement in overall coordination.

Finally, improvement was shown in the area of social development. The subject exhibited improvement in self confidence and initiating independent activity. He did not become upset as easily and was not as hyperactive as in the beginning of the program. The subject also could better accept constructive criticism and appeared happier.

CASE XXIII

Background Information. Gary was an eleven-year-old male with an I.Q. of 77 and a mental age of eight years nine months.

The subject was born prematurely at seven months. The mother stayed in bed six months of that time and was diagnosed as having toxemia of pregnancy. There was some bruising of the head during delivery. The subject had had most of the childhood diseases and made uncomplicated recoveries. There is no history of any familial illness. Gary lived with both his natural parents and two other siblings.

The subject had a history of academic failure. His report stated that he never did well in school and that he failed the third grade. He was referred to Children's Center because of academic failure and hyperactivity. A psychological evaluation was made in June, 1970, and the subject was functioning in the range of mild mental retardation. Since placement in the classes for the educable mentally retarded, Gary seemed to be progressing satisfactorily in academics; yet, it was reported that he experienced much difficulty in reading. He was small for his age and it had been observed that he fell often. Socially, Gary was very friendly and cooperative.

Purdue Perceptual-Motor Survey. On the initial administration of the Purdue Perceptual-Motor Survey the subject was very cooperative and rapport was easily attained. He could only follow simple directions but appeared to enjoy the testing period very much. His total initial score was 63, two points below the cut-off between achievers and non-achievers.

Only very slight difficulty was experienced in the areas of laterality, balance, and differentiality. Some minor problems were also experienced on the hopping patterns. Some confusion was evident as movement was slow and deliberate.

Motor problems were also evidenced in the area of perceptual-motor matching. There was evidence of a slight mid-line problem.

Performance was good and scores were very high in the areas of

ocular control and form perception.

The subject was very attentive and rapport was again easily attained on the post administration of the Purdue Perceptual-Motor Survey. Gary could only follow simple directions but was cooperative throughout testing. His total score was 65, two points higher than his initial score. This score lies on the cut-off point between achievers and non-achievers.

There continued to be slight difficulty in the areas of balance, laterality, and differentiality; however, there was slight improvement on the hopping patterns.

There was no change in performance in the area of perceptual-motor matching. There continued to be some minor problems with indications of a slight mid-line problem.

Performance was good and scores were again very high in the areas of ocular control and form perception.

Music Program. In the beginning of the program, Gary was happy and cooperative, however, he was a bit unsure of himself. He exhibited a poor self concept in that he lacked confidence and did not appear to be able to relax. In the beginning, he sat quietly and did not interact with others. Even though he held back at first, he appeared to hold some enthusiasm for the program and seemed to want to participate. His performance was good from the beginning of the program. His ratings on learning words and actions were good.

During the third week of the program, the music teacher commented that Gary was very capable if his interest could be aroused. During the fifth week of the program, Gary began to exhibit that he felt more a part of the group. He began to demonstrate an improved self concept by asking to perform before the group. He also exhibited a gain in confidence and began to interact with others. The music teacher rated his rhythm and coordination very good in the music activities. During the sixth week, Gary began to show marked improvement in all areas. Ratings were very high in performance and behavior. He was very pleasant, listened well, followed directions, and participated enthusiastically. He was enjoying much success, and it was apparent that he was very pleased with himself. Gary continued his marked improvement. The teacher commented during the seventh week that he was very quick to "catch on." He learned words to songs perfectly in just one day, was a leader in the group, and was very pleasant and cooperative. This behavior and performance continued throughout the remaining weeks of the program. Finally, the music instructor commented that toward the end of the program Gary exhibited signs of becoming very imaginative and creative.

Social and Emotional Classroom Behavior. It was the opinion of the subject's classroom teacher that he made improvement in three of the four areas on the teacher rating scale. He improved in classroom activities, personal health habits, and physical education participation.

In the area of classroom activities Gary became less tense during the latter weeks of the program.

In personal health habits, he exhibited improvement in neater arrangement of materials and care of personal belongings.

In the area of physical education participation the subject demonstrated better sportsmanship and an improvement in hand-eye, foot-eye coordination.

Finally, there was no improvement in the area of social adjustment. Ratings were generally high in this area except for two items. The subject exhibited extreme hyperactivity and became upset easily.

CASE XXIV

Background Information. John was an eleven-year-old male with an I.Q. of 75 and a mental age of eight years two months.

The mother of the subject experienced a pregnancy of usual length with no record of any complications. There were no evident mechanical injuries at birth. The subject had never been seriously ill and had suffered no serious injuries. John lived with both natural parents and eight siblings. There was no recorded history of familial illness. A medical impression was taken in March, 1970, and the diagnosis was "an intelligence disorder with cause unknown." It was suggested that cultural deprivation could have been a contributing factor.

John had no nursery or kindergarten experiences. He was referred to Children's Center while in the third grade. Reasons cited for his referral were scholastic failure and hyperactivity. It was also cited that the subject always had much difficulty following directions. His third grade teacher estimated that he was functioning on the first grade level. A psychological evaluation was made in April, 1970, and the subject was functioning in the range of mild mental retardation. He was placed in special education classes for the educable mentally retarded and was progressing satisfactorily in academics. Socially it was reported that he was a very moody child and tended to pick at peers. He also had a tendency to blame others when things went wrong.

Purdue Perceptual-Motor Survey. On the initial administration of the Purdue Perceptual-Motor Survey, the subject was attentive and rapport was easily attained. He appeared to have no problem following directions and seemed to enjoy the activities thoroughly. His total initial score was 59, six points below the cut-off separating the achievers and non-achievers.

No problems were indicated in the areas of balance and laterality. Only slight deviations were indicated in the areas of body image and differentiation. Finally, no problems whatsoever were indicated on the hopping patterns.

In the area of perceptual-motor matching, it was apparent that

some problems did exist. Directionality was poor and there was evidence of a slight mid-line problem.

Major difficulty was experienced in both the areas of ocular control and form perception.

On the post administration of the Purdue Perceptual-Motor Survey, the subject was attentive and rapport was again easily attained. He experienced some difficulty in following directions; however, he was pleasant and cooperative throughout testing. The subject's total post score was 59, the same as the initial score. There was no change in performance on any of the major areas on the Purdue.

Music Program. John was a very interesting case in that he appeared relaxed and confident, yet he did not appear to be happy and did not interact with others. He appeared to be rather withdrawn and was a loner. He held very little enthusiasm toward the program. From the beginning, John's performance was rated as good; however, he was not usually very cooperative and exhibited little respect for authority. It was felt that John had the potential to be one of the outstanding students; nonetheless, he used uncooperativeness and a disruptive behavior to cover up an intense fear of failure. The subject usually placed himself to the rear of the group; however, he was observed singing and following the group when he felt that no one was watching. During the fourth week of the program, the subject seemed to adjust to the group somewhat; however, his behavior worsened. He

picked at others and made fun of those singing. From the fifth week on, his behavior was very erratic. On some days he would be quiet and attentive, and on other days he would be uncooperative and disruptive. He experienced difficulty learning words to songs. This was probably due to a short attention span and inattentiveness. During the tenth week, John exhibited more enthusiasm for the program as he began to participate more readily. His behavior had improved somewhat, and he volunteered to sing before the group. During the twelfth week, John regressed, again showing his erratic behavior of occasionally being uncooperative and disruptive. This erratic behavior continued through the last weeks of the program. John would, at times, exhibit an improved behavior and then, at other times, would regress to his uncooperative and disruptive manner.

Social and Emotional Classroom Behavior. It was the opinion of the subject's classroom teacher that he made improvement in two of the four areas on the teacher rating scale. Improvement was exhibited in classroom activities and social adjustment. No improvement was noted in the areas of personal health habits and physical education participation.

In the area of classroom activities, the subject exhibited that he enjoyed school more as the program progressed. John also increased his attention span and demonstrated more of an eagerness to get to school each morning.

In the areas of personal health habits and physical education participation, no progress was noted; however, ratings were exceptionally high in both areas throughout the program.

In the area of social development, the subject gained self confidence and improved in interacting with peers. He also did not become upset as easily and improved in being able to accept constructive criticism. John appeared happier toward the end of the program and did not tell falsehoods as frequently as in the beginning. Finally, he was not as apt to take things that did not belong to him, and he increased his respect for authority.

CASE XXV

Background Information. Stan was a nine-year-old male with an I.Q. of 65 and a mental age of six years four months.

The mother of the subject experienced a full term pregnancy with no complications. Developmental lags were noted as the subject was late in learning to walk and talk. A medical impression was taken in July, 1966, with a diagnosis of minimal cerebral dysfunction. The subject experienced a lag in speech development and was plagued with distractability. The subject suffered a severe illness in 1971 with convulsions and high fever for several days. Stan lived with both natural parents and two siblings.

The subject experienced academic difficulty in the first grade and was referred to the Children's Center. He was diagnosed as

functioning in the range of mild mental retardation and placed in special education classes for the educable mentally retarded. Reasons for referral were stated as delayed speech, lack of vocabulary, and suspected retardation. The subject was reported to be progressing nicely in academics since his placement in special education. Socially, he was reported as being able to get along with others and was accepted by his classmates.

Purdue Perceptual-Motor Survey. On the initial administration of the Purdue Perceptual-Motor Survey, the subject was highly distractable and good rapport was never attained. The subject could only follow simple directions and was very apprehensive in the testing situation. His total initial score was 34, 31 points below the cut-off separating the achievers and non-achievers.

Major problems were evidenced in the areas of balance, laterality, and differentiality. Major problems were also encountered on the hopping patterns. The subject demonstrated confusion, hesitation, and a temporal lag. He also could not perform the skip; instead, galloping and jumping were substituted.

Major problems were also evidenced in the area of perceptual-motor matching. Directionality was poor and a definite mid-line problem was indicated.

The subject was highly distractable and experienced severe problems in ocular control. The lowest scores possible were

attained on all items.

Finally, Stan demonstrated only slight difficulty in form perception. Organization was good, but there were minor distortions in the diamonds.

On the post administration of the Purdue Perceptual-Motor Survey, the subject was not as distractable and good rapport was attained, but he could follow only simple directions. Stan appeared to be much more confident than on the initial test and seemed to be more relaxed. His total post score was 40, an increase of six points over the initial score. This score lies 25 points below the cut-off between achievers and non-achievers.

Stan demonstrated improvement in the areas of balance, laterality, differentiality, and body image. He was also now capable of performing the skip.

No improvement was shown in the area of perceptual-motor matching. Directionality continued to be poor and there remained evidence of a definite mid-line problem.

Also, there was no improvement shown in the area of ocular control. The subject again attained the lowest possible score on all items.

Finally, there was improvement in the area of form perception. The figures and organization were very good.

Music Program. Stan was a subject who made marked

improvement in both behavior and performance. In the beginning of the program, he probably possessed less ability than any subject in the entire program. He had much difficulty following directions and held little enthusiasm for the program. Stan exhibited a poor self concept for he could not relax, he lacked confidence, and he did not interact with others. Nonetheless, he did appear happy and was a very cooperative and pleasant child. During the fourth week of the program, Stan appeared to begin to make some progress. He seemed to gain some self confidence as he asked to perform before the group alone. He began to learn some of the words to songs and exhibited some improvement in rhythm and coordination in the activities. During the fifth and sixth weeks of the program, Stan began to exhibit an eagerness to learn and was putting forth more effort. During the tenth week of the program, Stan began to interact more readily with others, and he appeared to feel more a part of the group. The subject continued to improve as he achieved more success. He learned to skip and improved in the hopping and jumping patterns. He made improvement in identifying colors and learning words to songs. He began to appear very pleased with his performances. During the twelfth week, he exhibited that he had gained much confidence in his ability by volunteering to lead the group in a song. He knew most of the words and was very proud of himself for doing this. During the last weeks of the program, Stan became more expressive and began to verbalize more about the activities. This was very good for Stan since he was almost

non-verbal in the beginning of the program. It was finally observed that Stan made his greatest improvement in social development; yet, performance also improved somewhat.

Social and Emotional Classroom Behavior. It was the opinion of the subject's classroom teacher that he made improvement in all four areas on the teacher rating scale. The subject improved in: (1) classroom activities, (2) personal health habits, (3) physical education participation, and (4) social development.

In the area of classroom activities, the subject showed improvement in giving appropriate responses and following directions. Stan also was less tense at the end of the program than at the beginning.

In the area of physical education participation, the subject showed marked improvement. He became more enthusiastic toward physical activities. He improved in coordination, balance, and body control. Stan also was not so reluctant to make physical contact toward the end of the program as he had been in the beginning.

Finally, in the area of social development the subject exhibited an increase in self confidence. He interacted with peers more readily and was quicker to initiate independent activity. Toward the end of the program, Stan did not show as many fears as he did in the beginning.

CASE XXVI

Background Information. Jack was a twelve-year-old male with

an I.Q. of 71 and a mental age of eight years five months.

The subject had an identical twin and they were born prematurely. There were no complications reported during the pregnancy or delivery. The subject lived with his natural parents; there were no other siblings than the twin brother. In early development there appeared to be a lack of coordination as the subject was slow to learn to button clothes and tie his shoes. There were no obvious physical handicaps but the subject was reported to be hyperactive. Jack was diagnosed as being organically brain damaged, secondary to prematurity in twin birth with areas of intelligence, coordination, and behavior involved. There exists a family history of diabetes.

The subject was referred to Children's Center by a psychiatrist when he was five years old. The doctor reported that the mother found the subject to be hyperactive and difficult to manage at home. It was recommended at that time that it was doubtful if Jack could profit from placement in a regular classroom. He was tested psychologically in August, 1966 at the age of five years. He was found to be functioning in the range of mild mental retardation and was placed in special education classes for the educable mentally retarded. He experienced difficulty in the special classes because of distractability and hyperactivity. Socially, he did not get along well with others and is difficult to control.

Purdue Perceptual-Motor Survey. On the initial administration

of the Purdue Perceptual-Motor Survey the subject was distractable, however, rapport was easily attained. He was very talkative and could only follow simple directions. His total initial score was 58, seven points below the cut-off that separates the achievers and non-achievers.

Jack experienced only slight difficulty in the areas of balance, laterality, and differentiality. The subject performed the skip and body image was adequate. However, major problems were experienced on the hopping patterns. Movement was slow and deliberate, and a temporal lag was evident.

There were evidences of some discrepancies in the area of perceptual-motor matching. It was apparent that a mid-line problem existed.

Scores were very high in the areas of ocular control and form perception.

On the post administration of the Purdue Perceptual-Motor Survey the subject was again distractable. He was very talkative and rapport was again easily attained. The subject could follow only simple directions, but was persistent and eager to continue. His total post score was 58, the same as his initial score. There was no change in performance on any of the major areas on the survey.

Music Program. Jack possessed the most severe case of distractability of any subject in the program by far. This distractability

and his hyperactivity probably prevented much of the progress he might ordinarily have made. He exhibited many social and emotional problems, demonstrating that it was very difficult for him to maintain self control. In the beginning of the program his ratings were very low in all areas of behavior and performance. Jack had much difficulty following directions, lacked confidence, and projected a poor self concept. Jack was so distractable that he could not attend to any one activity long enough to develop any interest or enthusiasm for the program. In the fourth week of the program he refused to perform alone or with the group. During the fifth week Jack finally sang before the group. He was very apprehensive and stated that "I hope I do good." He knew the words to the song fairly well and was pleased with his performance. There was carry over into the sixth week; he appeared more confident and enjoyed the activities thoroughly. However, he continued to require close supervision or he would become disruptive. During the ninth and tenth weeks Jack continued to show improvement in performance and behavior. He appeared not to be listening, but was capable of picking up words and motions seemingly without paying attention. The subject's behavior continued to be very erratic. At times he would become preoccupied and would or could not follow directions. He then, of course, could not perform as he was expected to. Jack's distractability continued to make it very difficult for him to follow along in group activity. His attention was diverted very easily. Jack was characteristic of the brain injured child and it was

that he made satisfactory progress in consideration of his condition.

Social and Emotional Classroom Behavior. It was the opinion of the subject's classroom teacher that he made improvement in all four areas on the teacher rating scale. Improvement was made in: (1) classroom activities, (2) personal health habits, (3) physical education participation, and (4) social development.

In classroom activities the subject improved in making appropriate responses, showing imagination, and remembering things. Jack was also not as easily distracted in the end as he was in the beginning of the program.

In the area of personal health habits the subject became more settled and was not as nervous as the program progressed.

In the area of physical education participation Jack became more enthusiastic toward physical activities. He improved in large muscle, and hand-eye, foot-eye coordination. Finally, the teacher observed that he also improved in balance and body control.

Finally, in the area of social development the subject interacted with peers more readily and did not become upset as easily.

CASE XXVII

Background Information. Mack was an eleven-year-old male with an I.Q. of 65 and a mental age of seven years six months.

The subject's mother experienced a pregnancy of normal length

with no complications. There were also no complications during the delivery. The subject experienced a hernia operation at age five months. A medical impression was taken in 1967 with the diagnosis being minimal cerebral dysfunction. Mack also experienced developmental delays and did not walk or talk until two years of age. The subject suffered a severe deficit in visual perception. He had a complete opthalmological examination and wore corrective lenses. Mack lived with his natural parents and one other sibling, a younger brother.

The subject was referred after experiencing academic difficulty in the first grade. He was tested in 1967 and was found to be functioning in the range of mild mental retardation. Reasons for referral were a short attention span, inability to work independently, and delayed speech. The subject was placed in special education classes for the educable mentally retarded in another state. In 1971 the subject entered special education classes in Montgomery. He reportedly progressed slowly in academics since his placement. Socially, he was quiet, reserved and got along well with others.

Purdue Perceptual-Motor Survey. On the initial administration of the Purdue Perceptual-Motor Survey the subject was distractable and rapport was slowly attained. He could follow only simple directions, gave up easily, and sought to terminate activity. His total initial score was 31, 34 points below the cut-off separating the achievers and non-achievers.

Severe problems were evidenced in the areas of balance, body image, laterality, and differentiality. The subject could not perform the skip and experienced major difficulty on the hopping patterns.

Major problems were also experienced in the area of perceptual-motor matching. Directionality was poor and there were indications of a mid-line problem.

Finally, major difficulty was experienced in the areas of ocular control and form perception. The lowest possible scores were attained in these areas.

On the post administration of the Purdue Perceptual-Motor Survey the subject was again distractable, but rapport was more easily attained than on the initial test. The subject demonstrated that he could not follow directions, was very apprehensive, and sought to terminate activity. His total post score was 30, one point less than his initial score. This score lies 35 points below the cut-off separating the achievers and non-achievers. There was no change in performance on any of the major areas on the Survey.

Music Program. In the beginning of the program Mack's performance was very poor and he also exhibited many social adjustment deficits. All his movement patterns were near retarded. Socially, Mack appeared to be very apprehensive about all situations to the point of being very withdrawn. He projected a very poor self concept, lacked confidence, and did not interact with others. The subject was

not very enthusiastic in the beginning, he did not appear happy, and he could not relax within the group. During the fourth week of the program Mack asked to perform before the group for the first time. His performance was fair as he knew some of the words and he was very pleased with himself. After enjoying this success he appeared to relax somewhat, his enthusiasm increased, and he appeared more attentive and better able to follow directions. During the seventh week it was observed that Mack was continuing slight progress. He was well behaved, but required praise and encouragement to stimulate performance. During the tenth week it was observed that Mack was continuing the slow and steady progress. He had much difficulty learning words, but he appeared to enjoy the activities thoroughly. During the last weeks of the program it was noted that Mack became somewhat more expressive and verbal about the program. He began to interact and converse with others. His smiles seemed more frequent than in the beginning of the program. In the end Mack's performance was still lacking in many ways. However, he was pleasant and cooperative and put forth maximum effort. He appeared to make his greatest gain in social development. By the end of the program he felt that he was a part of the group. He was never critical of others and always put forth a maximum effort to get along.

Social and Emotional Classroom Behavior. It was the opinion of the subject's classroom teacher that he made improvement in three

of the four areas on the teacher rating scale. Improvement was made in the areas of classroom activities, physical education participation, and social development. No progress was made in personal health habits, however ratings were generally high in that area.

In the area of classroom activities he made only slight improvements on one item. Drawings and paintings were less messy toward the end of the program.

In physical education participation the subject gained markedly in enthusiasm. His general attitude toward physical education improved and he complained less about having to continue to play.

Finally, in the area of social development progress was slight and on only one item. During the program Mack began to exhibit less fears than before.

CASE XXVIII

Background Information. Suzanne was a nine-year-old female with an I.Q. of 62 and a mental age of five years seven months.

The mother of the subject experienced a pregnancy of normal length with no complications. There were also no complications during the delivery. The first indication of problems was noted by the mother when at a very early age the subject began to fall from her high chair. A medical impression was taken and the diagnosis was an epileptic condition. Suzanne began having seizures when she was 13 months old and continued to have seizures of the grand mal

type. She lived with both natural parents and three siblings, all sisters.

The subject was referred to Children's Center by her doctor at the age of five years. It was felt that the child could not benefit from the regular classroom. Reasons for referral were stated as behavior problems, hyperactivity, and poor fine muscle coordination. The subject was taking medication to control the hyperactivity. She was tested in November, 1968, and recommended for placement in special education classes for the educable mentally retarded. It was reported that the subject had progressed satisfactorily in academics. Socially, she liked people and got along well with others.

Purdue Perceptual-Motor Survey. On the initial administration of the Purdue Perceptual-Motor Survey, the subject was very talkative and highly distractable. Rapport was easily attained, but the subject could only follow simple directions. Her total initial score was 37, 28 points below the cut-off separating the achievers and non-achievers. The subject experienced difficulty in the areas of balance, body image, laterality, and differentiality. She could not perform the skip and experienced major problems on the hopping patterns. Movement was slow and deliberate with hesitation and confusion on the hopping patterns.

Major problems were also experienced in the area of perceptual-motor matching. Directionality was poor and there was evidence of a mid-line problem.

Suzanne exhibited severe problems in the areas of ocular control and form perception. The lowest possible scores were attained in both areas.

On the post administration of the Purdue Perceptual-Motor Survey, the subject was again talkative and highly distractable. She could only follow simple directions, yet was eager to continue the activities. Her total post score was 37, the same as the initial score. There was no change in performance on the post administration of the Survey as compared to the initial administration.

Music Program. Suzanne was another child whose estimation of her abilities was high in comparison to her low ability level. From the beginning of the program, she appeared happy and confident despite the fact that her coordination and rhythm were poor and that she experienced much difficulty in learning words to songs. She would ask to perform before the group. She would put forth maximum effort, but her ability levels were very low. During the fifth week, Suzanne appeared to make some improvement in following directions, waiting her turn, and working cooperatively with the group. Suzanne was under medication to control seizures and, occasionally, she would not feel good and would become upset easily. Other than these times, her behavior was very good. The subject interacted fairly well with others, and as the program progressed, she seemed to better understand what was expected of her. Much of the subject's progress was impeded by

her high rate of distractability. This resulted in inconsistency in behavior, and some days she was more attentive and better behaved than others. However, it was felt that she was putting forth maximum effort and trying to the best of her ability. Her problems would simply overcome her at times. As the program progressed, Suzanne continued her enthusiasm. She made some progress in performance and behavior but this was very limited and inconsistent.

Social and Emotional Classroom Behavior. It was the opinion of the subject's classroom teacher that she made improvement in all four areas on the Purdue Perceptual-Motor Survey. Improvement was made in: (1) classroom activities, (2) personal health habits, (3) physical education participation, and (4) social adjustment.

In the area of classroom activities, it was noted that as the program progressed the subject enjoyed school more and improved in following directions. She also became less distractable and improved in giving appropriate responses. Suzanne also improved in form and organization on written tasks and complained less about assigned tasks. She also became more dependable in completing tasks.

In the area of personal health habits, the subject only made slight improvement on one item--she appeared less nervous as the program progressed.

In physical education participation, Suzanne became more enthusiastic toward physical activities, exhibited an improvement in

sportsmanship, and demonstrated improvement in gross motor and hand-eye coordination. The subject had an improved attitude toward physical activity, got hurt less in physical play, and complained less about having to continue to play.

Finally, improvement was also shown in the area of social development. The subject improved in self confidence, became more willing to attempt new activities, and came to interact more readily with peers. She did not become upset as easily, could better accept constructive criticism, and appeared happier. Suzanne made a marked improvement in showing less fear than in the beginning and exploded less under stress.

CASE XXIX

Background Information. Bob was a nine-year-old male with an I.Q. of 61 and a mental age of five years six months.

The mother of the subject experienced a full term pregnancy with no complications. The child was delivered at home by a midwife. Developmental delays were reported in this case; Bob did not walk until three years of age and was more than a year old before he talked. In December, 1968, a psychiatrist diagnosed Bob's condition as a thought disorder caused by a cultural deprivation and organic lack of intelligence. Also diagnosed was the presence of a cardiac lesion. There was recorded a history of congenital cardiac disease within the family. The subject lived at home with his natural mother and six

siblings. The father had apparently left the home.

Referral was made to the Children's Center by a teacher and social worker. Reasons for referral were cited as difficulty in comprehension and evidence of some emotional problems. The subject was never enrolled in regular classes. He attended a special school for trainable children for the first two years and was then referred to Children's Center. The subject was then placed in special education classes for the educable mentally retarded. He had progressed well in academics, was friendly and cooperative, and got along well with others.

Purdue Perceptual-Motor Survey. On the initial administration of the Purdue Perceptual-Motor Survey, the subject was attentive and rapport was easily attained. He had much difficulty following directions but was eager to continue once he had begun activity. His total initial score was 44, 21 points below the cut-off separating the achievers and non-achievers.

The subject experienced only slight difficulty in the areas of balance, laterality, and differentiation. Body image was adequate; however, some difficulty was experienced on the hopping patterns.

Major difficulty was also evidenced in the area of perceptual-motor matching. Directionality was poor, and there was evidence of a mid-line problem.

There were also severe problems in the areas of ocular control

and form perception. The lowest possible scores were attained in both areas.

On the post administration of the Purdue Perceptual-Motor Survey, it was noted that the subject was highly distractable. Rapport was easily attained, but the subject could follow only simple directions. The total post score was 45, one point more than the initial score. There was no change in performance on the post administration of the Survey as compared to the initial administration.

Music Program. In the beginning of the program, Bob projected a poor self concept even though his performance was good and he appeared to possess adequate ability. He was cooperative and demonstrated a respect for authority. He appeared to be relatively happy, yet did not appear relaxed and lacked confidence. Bob's progress was slow and gradual. During the fifth week of the program, he appeared to relax somewhat and began to participate in the activities. He had to be encouraged to perform, but once he started he seemed to be very capable and appeared to be pleased with himself. His distractability prevented his learning words to songs readily. As the program progressed he appeared to gain confidence and enjoy the activities more. During the ninth week, it was noted that Bob made some improvement in learning words to songs and projected an improved self concept. He became more relaxed and at ease and exhibited that he felt more a part of the group. During the eleventh week of the program Bob asked to perform before the group. He was very confident, knew the

words, and did an excellent job. He began to demonstrate a marked improvement in attitude and his performance continued to improve. Bob exhibited a somewhat disruptive behavior at times and occasionally was in conflict with others; this behavior was characteristic of the hyperactive and distractable children. Surprisingly Bob was reluctant to perform since children with his ability were usually anxious to perform. It seemed apparent that he underestimated his abilities. Bob continued this erratic behavior.

It was noted during the thirteenth week that he continued to withdraw to the background, but once he began to take part, his performance was usually good. Bob appeared to make some improvement in behavior and performance, but continued to be unpredictable throughout the program. His distractability seemed to be the major factor impeding any other progress that may have occurred.

Social and Emotional Classroom Behavior. It was the opinion of the subject's classroom teacher that he made improvement in all four areas on the teacher rating scale. Improvement was made in: (1) classroom activities, (2) personal health habits, (3) physical education participation, and (4) social development.

In the area of classroom activities, the subject improved in giving appropriate responses and exhibited more imagination. He was also not as distractable and demonstrated an improvement in form and organization on the written tasks. Moreover, as the program

progressed the subject was not as tense and complained less about assigned tasks.

Only slight improvement was made in the area of personal health habits. After some time he appeared less nervous and demonstrated an improvement in taking care of materials and personal belongings.

In the area of physical education participation, he exhibited an improvement in sportsmanship. Also improvement was noted in large muscle and hand-eye coordination.

Finally, in the area of social development, the subject did not appear as hyperactive after the fourth week. After the fifth week, he did not become upset as easily as he once had. He came to accept constructive criticism better and did not show as many fears as he once had.

CASE XXX

Background Information. Vivian was a ten-year-old female with an I.Q. of 63 and a mental age of six years four months.

The mother of the subject experienced a pregnancy of normal length with no complications. There were also no problems that occurred during delivery. There were no developmental delays observed during early childhood. However, it was noted that the subject had difficulty mastering tasks involving fine motor coordination such as buttoning and tying. The mother had previously been hospitalized for

schizophrenia. The parents were separated and the subject lived with her mother and six other siblings, three brothers and three sisters. It had been observed that the subject experienced some emotional problems. She was reported to stutter, gasp under stress, wet the bed, and eat with her hands.

Vivian had a history of academic difficulty. She repeated the first grade and was then referred to Children's Center. She was tested in August, 1969, and found to be functioning in the range of mild mental retardation. She was recommended for placement in special classes for the educable mentally retarded. She had progressed slowly in academics since placement. She appeared to get along with others, however, she was easily influenced.

Purdue Perceptual-Motor Survey. On the initial administration of the Purdue Perceptual-Motor Survey the subject was quiet and attentive. She could follow only simple directions, but seemed to enjoy all activities. Her total initial score was 54, 11 points below the cut-off separating the achievers and non-achievers.

There were slight problems in the areas of balance, laterality, and differentiality. Vivian projected a poor body image as she did not know all the body parts. She also experienced some difficulty on the hopping patterns. Movement was slow and deliberate and a temporal lag was evident.

Major problems were evidenced in the area of perceptual-motor

matching. Directionality was poor and there were indications of a definite mid-line problem.

Finally, there were problems evident in both ocular control and form perception. Scores were low in both areas.

On the post administration of the Purdue Perceptual-Motor Survey the subject was again quiet and attentive. She could follow only simple directions, but seemed to enjoy the testing period. Her total post score was 53, one point below the initial score. There was no change in performance on the post administration of the Survey as compared to the initial administration.

Music Program. In the beginning of the program Vivian projected a poor self concept, she lacked confidence, and did not interact readily with others. She also demonstrated poor rhythm and coordination. During the fourth week it was noted that the subject asked to perform, but she only wanted to perform with the group and not alone. Vivian was generally well behaved, but if she was not closely supervised she would misbehave and be disruptive. During the sixth week of the program it was observed that the subject began to be more enthusiastic toward the program and her behavior seemed to be somewhat more consistent. If she did not perform she would sit quietly to wait her turn and listened intently to others while they sang. She demonstrated that she could learn the words to songs and motions for the activity quickly. During the twelfth week she finally volunteered to perform

alone but continued to be apprehensive while performing. During the final weeks of the program Vivian demonstrated a pleasant attitude and appeared to have more confidence. The subject also showed improvement in listening and following directions. She appeared to be happier than in the beginning and appeared to feel more a part of the group. This improvement in performance and behavior continued through the last weeks. It was noted that Vivian sought attention and was very eager to please. This fact probably contributed to her improvement in both performance and behavior. The most notable improvement was the consistency of her behavior.

Social and Emotional Classroom Behavior. It was the opinion of the subject's classroom teacher that she made improvement in two of the four areas on the teacher rating scale. Improvement was made in classroom activities and physical education participation. Ratings were consistent and generally high in the areas of personal health habits and social development.

In the area of classroom activities the subject was not as easily distracted and showed more imagination as the program progressed.

In the area of physical education participation only slight improvement was made. The subject exhibited an improved general attitude toward physical activity.

CHAPTER V

SUMMARY, FINDINGS, AND CONCLUSIONS

SUMMARY

This study was designed to examine the effects of a program of perceptual-motor training and music and a program of music only on the development of perceptual-motor skills and behavior of educable mentally retarded children.

The purposes of the study were to determine the effects of these programs on:

1. The development of perceptual-motor skills, as measured by the Purdue Perceptual-Motor Survey.

2. General behavior as observed in classroom activities, personal health habits, physical education participation, and social adjustment.

The method of research selected for the study was the case study technique. Thirty educable mentally retarded elementary grade level boys and girls enrolled in special education classes at the Children's Center of Montgomery, Alabama, were studied. The subjects were placed in two groups of 15. Group I was made up of 8 boys and 7 girls who participated in a combined program of 30 minutes of sequential

and structured perceptual-motor training and 30 minutes of a structured music program each day, 5 days per week. Group II was made up of 7 boys and 8 girls who participated in only the structured music program for a period of 30 minutes each day for 5 days per week.

Case studies were written to describe each subject's experiences in the special programs. Sources of data were:

1. Background information from the subject's records which contained family and social history, psychological data, medical history, educational history, and other pertinent information.

2. Evaluation of perceptual-motor attributes at the beginning and end of the program using the Purdue Perceptual-Motor Survey.

3. Teacher Rating Scale evaluating each subject's social and emotional behavior in classroom activities, personal health habits, physical education participation, and social development during the 15 week experimental period.

4. Daily anecdotal records which included the daily perceptual-motor and music activities participated in, time involved in each activity, level of achievement, and social behavior for each subject.

FINDINGS

Perceptual-Motor and Music Program

The educable mentally retarded children who participated in the perceptual-motor and music programs were found to evidence substantial changes in perceptual-motor skills, as measured by the Purdue

Perceptual-Motor Survey, and social and emotional classroom behavior.

Perceptual-motor skills. Of the 15 subjects who were initially tested for perceptual-motor skills by means of the Purdue Perceptual-Motor Survey and who took part in the perceptual-motor and music programs:

1. Five subjects scored from 22 to 30 points below the cut-off separating achievers from non-achievers.

2. Six subjects scored from 11 to 17 points below the cut-off separating achievers from non-achievers.

3. Four subjects scored from 4 to 6 points below the cut-off separating achievers and non-achievers.

4. The average score was 49.5.

Of the 15 subjects who were re-tested for perceptual-motor skills by means of the Purdue Perceptual-Motor Survey:

1. Four subjects scored from 13 to 19 points below the cut-off separating achievers and non-achievers.

2. Six subjects scored from 1 to 7 points below the cut-off separating achievers and non-achievers.

3. Five subjects scored from 1 to 8 points above the cut-off separating achievers and non-achievers.

4. The average score was 60.7.

Of these 15 subjects who were tested and re-tested:

1. All subjects improved their scores.

2. Nine subjects had a range of improvement from 11 to 23 points.

3. Six subjects had a range of improvement from 3 to 6 points.

4. The average improvement was 11.4 points.

Social and emotional classroom behavior. All subjects in the combined program were able to improve, to various degrees, in at least one area in social and emotional behavior. Twelve of the 15 subjects evidenced improvement in the area of classroom activities. Nine exhibited improvement in personal health habits. Eleven of the subjects also made improvement in the area of physical education participation. Twelve subjects marked gains in social development. Finally, three of the subjects made gains in some areas and losses in others.

Music Program

The educable mentally retarded children who participated only in the music program were found to evidence some changes in perceptual-motor skills, as measured by the Purdue Perceptual-Motor Survey and social and emotional classroom behavior.

Perceptual-motor skills. Of the 15 subjects who were initially tested for perceptual-motor skills by means of the Purdue Perceptual-Motor Survey:

TABLE I

IMPROVEMENT IN PERCEPTUAL-MOTOR SKILLS AND BEHAVIOR PATTERNS OF EDUCABLE MENTALLY RETARDED CHILDREN IN THE PERCEPTUAL-MOTOR AND MUSIC PROGRAMS

Subject Number	Perceptual-Motor Skills Improvement Scores	Classroom Behavior	Personal Health Habits	Physical Education Participation	Social Development
1	+ 5	Moderately Improved	Moderately Improved	Greatly Improved	Moderately Improved
2	+ 16	Moderately Improved	No Change	No Change	No Change
3	+ 6	Greatly Improved	Moderately Improved	Moderately Improved	Moderately Improved
4	+ 23	Moderately Improved	Moderately Improved	Greatly Improved	Greatly Improved
5	+ 14	Moderately Improved	Moderately Improved	Moderately Improved	Moderately Improved
6	+ 4	No Change	Moderate Regression	Moderately Improved	Moderately Improved
7	+ 5	Moderately Improved	No Change	Moderately Improved	Moderately Improved
8	+ 12	Moderately Improved	Moderately Improved	No Change	Moderately Improved
9	+ 11	No Change	No Change	Moderate Regression	Moderately Improved
10	+ 3	Greatly Improved	Moderately Improved	Moderately Improved	No Change
11	+ 13	Moderately Improved	Moderately Improved	Moderately Improved	Moderately Improved
12	+ 3	Moderately Improved	Moderately Improved	Greatly Improved	Greatly Improved
13	+ 22	Moderately Improved	No Change	No Change	Moderately Improved
14	+ 15	Greatly Improved	Moderately Improved	Moderately Improved	Moderately Improved
15	+ 19	Moderate Regression	No Change	Moderately Improved	No Change

1. Six subjects scored from 20 to 34 points below the cut-off separating achievers from non-achievers.

2. Three subjects scored from 11 to 13 points below the cut-off separating achievers from non-achievers.

3. Six subjects scored from 2 to 7 points below the cut-off separating achievers from non-achievers.

4. The average score was 48.9.

Of the 15 subjects who were re-tested for perceptual-motor skills by means of the Purdue Perceptual-Motor Survey:

1. Six subjects scored from 20 to 34 points below the cut-off separating achievers from non-achievers.

2. Three subjects scored from 12 to 15 points below the cut-off separating achievers from non-achievers.

3. Six subjects scored from 0 to 7 points below the cut-off separating achievers from non-achievers.

4. No subjects scored above the cut-off separating achievers from non-achievers.

5. The average score was 50.5.

Of these 15 subjects who were tested and re-tested:

1. Six subjects improved their scores.

2. Five subjects had identical initial and final scores.

3. Four subjects had slight decreases on their final scores.

4. The largest increase was six points by one subject.

5. The average initial and final scores were essentially the same.

TABLE II

IMPROVEMENT IN PERCEPTUAL-MOTOR SKILLS AND BEHAVIOR PATTERNS OF EDUCABLE MENTALLY RETARDED CHILDREN IN THE MUSIC PROGRAM

Subject Number	Perceptual-Motor Skills Improvement Scores	Classroom Behavior	Personal Health Habits	Physical Education Participation	Social Development
16	+2	Moderately Improved	No Change	Greatly Improved	Moderately Improved
17	-1	Moderate Regression	Moderately Improved	No Change	Moderately Improved
18	+2	No Change	No Change	Moderately Improved	Moderately Improved
19	-3	Moderately Improved	No Change	No Change	No Change
20	+1	Moderately Improved	No Change	Moderately Improved	No Change
21	0	Moderate Regression	Moderate Regression	No Change	Moderate Regression
22	-1	Greatly Improved	Greatly Improved	Moderately Improved	Moderately Improved
23	0	Moderately Improved	Moderately Improved	Moderately Improved	Moderate Regression
24	+2	Moderately Improved	No Change	No Change	Greatly Improved
25	0	Moderately Improved	Moderately Improved	Greatly Improved	Greatly Improved
26	+6	Greatly Improved	Moderately Improved	Moderately Improved	Moderately Improved
27	0	Moderately Improved	No Change	Moderately Improved	Moderately Improved
28	-1	Greatly Improved	Moderately Improved	Greatly Improved	Greatly Improved
29	0	Greatly Improved	Moderately Improved	Moderately Improved	Greatly Improved
30	+1	Moderately Improved	No Change	Moderately Improved	No Change

Social and emotional classroom behavior. All subjects were able to improve, to various degrees, in at least one area in social and emotional behavior. Twelve of the 15 subjects exhibited improvement in classroom activities. In the area of personal health habits 7 subjects evidenced improvement. Also 11 of the 15 marked a gain in the area of physical education participation. Ten subjects exhibited gains in social development. Finally, four subjects marked gains in some areas and losses in others.

DISCUSSION OF FINDINGS

Perceptual-Motor Skills

The subjects were evaluated for perceptual-motor skills by the Purdue Perceptual-Motor Survey. The Survey is a qualitative scale which is not highly structured and is easy to administer. A cut-off score that separates achievers from non-achievers was established by the authors of the Purdue Perceptual-Motor Survey. None of the subjects surpassed the cut-off score on the initial administration of the Survey. However, five of the subjects in the combined perceptual-motor and music programs surpassed the cut-off score on the post administration. None of the subjects that participated in only the music program surpassed the cut-off score on the post administration.

The subjects participating in the combined perceptual-motor and music programs made much greater improvement in perceptual-motor skills than the subjects who participated in music only. A major

reason for this was probably the fact that the subjects in the combined probrams were engaged daily in activities that dealt directly with movement and the development of perceptual-motor skills. They also received the same music program as the music only subjects. The programs were somewhat similar in that the music program contained some few activities that dealt with the development of perceptual-motor skills. Some of those activities were clapping in rhythm to music, hopping, jumping, skipping, and dancing. Some of the music activities also reinforced laterality, directionality, and differentiality. The differences in the programs were that in the music program there were fewer movement activities than in the perceptual-motor program. The music program also contained many activities where little movement was required. Some of those were group singing, recording sessions, small group or individual performances where the remainder of the group would observe. In the perceptual-motor program each daily session was devoted to movement oriented activities in which usually the total group was involved.

Some few subjects in the study were suspected of having minimal brain damage. Because of their distractability and usual hyperactivity they could not attend to a task for any extended length of time. These factors greatly influenced their progress. It was also observed that these subjects generally had difficulty in the areas of balance and coordination.

It was generally found in this study that the subjects made good

progress and fairly rapidly when afforded the opportunity to practice perceptual-motor skills. Exceptions to this were the children at either extreme. Two subjects were severely perceptually impaired and made very little progress, while two others possessed exceptional physical ability and also made very little progress.

The literature points out that mentally retarded children often possess a poor self concept and lack confidence. These children will withdraw from various opportunities because of a fear of failure. The lack of ability for continuity of effort and lack of ability to follow directions were also important in influencing the development of perceptual-motor skills. It was generally found that as a subject gained confidence and improved self concept his performance was improving at the same time.

Many factors must be considered in the testing of the educable mentally retarded subjects. The limited intellectual capacity, poor self concept, lack of confidence, and short attention spans were factors that probably affected performance. Also, it was felt that the kind of rapport developed with the subject before each administration was an important factor. Finally, to be considered was the fact that on the post tests the subjects were more at ease with the investigator and more familiar with the test items.

Other factors were also considered in this study as affecting perceptual-motor skills. Some of the children had been sheltered within the family and were never afforded the opportunity to interact

with other children. They had few opportunities to experiment with their own bodies in movement that would have enhanced perceptual-motor development.

There appeared to be a definite relationship between scores on the Purdue Perceptual-Motor Survey and the ability of subjects to learn new skills. Through observation and discussion with teachers there was also noted a consistent relationship between perceptual-motor ability and academic achievement. That is, subjects who were adequate in most perceptual-motor areas were usually found to be progressing well in academics. However, it was interesting to note that in many cases where subjects had experienced socio-cultural deprivation, they might be very capable physically, but progressing slowly in the classroom.

Social and Emotional Classroom Behavior

There are many factors and uncontrollable variables to be considered in rating social and emotional behavior of children. All subjects showed some improvement in at least one area on the Teacher Rating Scale. Some of this improvement, however, was attributed to the fact that initially many of the students were apprehensive and possessed fears that disappeared after they became familiar with their new surroundings and the new faces within the group. It was felt by the investigator that improvement made after the first and second weeks was more significant than that noted in the first few days.

The Teacher Rating Scale also called for strictly subjective ratings which have obvious limitations.

It was found that the "drainage theory" was supported in this study. It has been hypothesized that free play will not drain excess energy from children, but tends to make them more excitable and hyperactive. However, if activity is goal-centered and meaningfully structured it may serve useful purposes in the educational processes. It was found in this study that some of the children's behavior was adversely affected in the classroom immediately before and after the special programs. They would become excited in anticipation of reporting for the special programs and could not easily "tune down" after returning to the classroom. This was expected from some of the excitable and hyperactive children.

In most cases, after the subjects had achieved some success in performance and their self concept was improved, they would also demonstrate improvement in behavior. It was observed generally that those subjects exhibiting confidence and achieving success in performance were usually better adjusted socially. Early in the program some subjects released hostility and excess energy on each other. As the programs progressed and the subjects became more involved in the activities this type behavior became less and less evident.

It was observed that no major differences existed between the two groups in improvement of social and emotional behavior. It was noted that participation in this type of group activity tended to facilitate

social and emotional behavioral improvement. The exception to this was found in the brain damaged subjects. Group activity appeared to enhance their distractability and hyperactivity. Those subjects could probably benefit more from a highly structured situation and individualized instruction.

In this study it was found that if activities were presented that did not surpass the ability levels of the children, discipline problems were held to a minimum. It was generally concluded that the children as a group learned to accept constructive criticism and improved in following directions. It was also generally noted that subjects who possessed a poor self concept or had trouble following directions would create defense mechanisms. The most common defense mechanism appeared to be disruptive behavior. A child would misbehave in order to draw attention away from his inability to comprehend directions or perform a task. This made it apparent that some of the children could have benefited from individualized instruction to allow for success and to build self concept bef- e participating within the group.

Finally, it is felt necessary to point out here that in the initial selection of subjects it was not known that some of the subjects should have been classified as brain damaged. All subjects were selected from classes designated as educable mentally retarded. The discussion of findings concerned with the distractability and hyperactivity characteristics were mainly results of the inclusion of the brain damaged subjects.

CONCLUSIONS

Within the limitations of this study, the following conclusions were drawn:

1. Combined perceptual-motor and music programs will improve perceptual-motor skills of educable mentally retarded children.

2. Combined perceptual-motor and music programs will develop perceptual-motor skills to a much greater extent than a music program alone.

3. Similar gains were made in social and emotional behavior by subjects in the combined programs and subjects in the music program only. Therefore, it was concluded that structured and meaningful group activity of various types may improve behavior of educable mentally retarded subjects.

4. Improvement in physical skills appears to enhance an improved self concept.

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APPENDICES

APPENDIX A

CONTENT AND PROGRESSION OF INSTRUCTIONAL PROGRAM

Perceptual-Motor Training Program

Week 1

Body Image - Children need to develop an awareness of their bodies. The child must have good body image in order that they may advance with expediency in other areas. They must learn at an early age to distinguish right from left (laterality), they must be able to differentiate one body part from another and between movement of these parts. Activities in this section are directed toward the development of these skills.

Week 1

Monday

1. Orientation - Introduce a few sample drills such as walking, lining up single file, starting and stopping, sitting, getting up, forming a circle, etc. Have the children repeat the commands as the teacher gives them. This period is to help the children understand that they are to listen to directions and respond to visual and auditory cues.

2. Activities to help determine handedness.
   a. Children are instructed toss beanbag in the air with one hand and catch it with the same hand, then with opposite hand. Repeat several times. (Allow the child to begin with his preferred hand.)

   b. Repeat the activity with the other hand. Instructions are: "Now, let's try with the other hand."

   c. Toss beanbag to partner with preferred hand several times, then with opposite hand.

Week 1

Tuesday

1. Supply large paper and crayons. Instruct the children to draw a picture of themselves. These will be evaluated by a psychologist and mental ages computed from the drawings. These will be kept for future reference and comparison to post-program drawings.

2. Activities to help determine handedness.
   a. Children are instructed to toss beangab in the air with one hand and catch it with the same hand, then with the opposite hand. Allow the child to begin with his preferred hand. Repeat these activities beginning with the non-preferred hand.
   b. Toss beanbag to partner with preferred hand several times, then with opposite hand.

Week 1

Wednesday

1. Game - Call Ball

2. Review - Repeat tossing beanbag in air and catching with same hand, then other hand. Repeat tossing beanbag to partner with preferred hand several times, then with opposite hand.

3. Play catch with partner, using 8" playground ball. Roll ball to partner.

4. Bounce playground ball to partner repeatedly with preferred hand, with opposite hand, with both hands.

Week 1

Thursday

1. The children are instructed to identify body parts. They are instructed to say and touch them as the instructor does.

a. mouth	f. arms	k. wrists	p. back
b. ears	g. legs	l. chest	q. hips
c. chin	h. elbows	m. fingers	r. knees
d. neck	i. ankles	n. stomach	s. feet
e. shoulders	j. toes	o. hands	t. heels

Instructions are: "This is my head." Continue using the preceding.

2. The children are instructed to identify body places by touch.

   a. front
   b. back
   c. sides
   d. top
   e. bottom

3. Activities to help determine handedness.
   a. Bounce playground ball to partner repeatedly with preferred hand, with opposite hand, with both hands.
   b. Toss playground ball to partner in air repeatedly with preferred hand, with opposite hand, with both hands.

Week 1

Friday

1. Review - Identification of body parts.

2. Review - Identification of body places.

3. Review - Beanbag and playground ball activities.

Week 2

Monday

1. Instruct the children to touch body parts with other body parts.
   a. nose to knee
   b. chin to chest
   c. ear to shoulder
   d. hands to hips
   e. elbows to knees
   f. toes to nose
   g. wrist to ear
   h. elbow to leg
   i. chin to wrist
   j. wrist to back
   k. foot to leg
   l. heel to heel

   Progression is determined by children. Repeat in various orders.

2. Identification of body places and parts in relation to objects.
   Instructor asks child to touch:
   a. floor with head
   b. wall with back
   c. wall with hands
   d. chalk board with elbows
   e. mat with knees
   f. mat with side
   g. chair with front
   h. window with nose
   i. chair with ear
   j. mat with shoulder
   k. floor with fingers
   l. desk with chest

3. Activities to help determine handedness.
   a. Toss playground ball against wall with preferred hand, let bounce and catch. With opposite hand, let bounce and catch. With both hands, let bounce and catch. Repeat each one several times.
   b. Walk across stage while bouncing playground ball. Begin with preferred hand, then with opposite hand. Repeat several times.

Week 2

Tuesday

1. Review - Touch body parts with body parts.

2. Review - Identification of body places and parts in relation to objects.

3. Game - Call Ball

4. Walk across stage while bouncing playground ball. Begin with preferred hand, then with opposite hand. Repeat several times.

5. Toss playground ball against wall with preferred hand, let bounce and catch. With opposite hand, let bounce and catch. With both hands, let bounce and catch. Repeat each one several times.

Week 2

Wednesday

1. Review - Identification of body places and parts in relation to objects.

2. The children are instructed to carry a beanbag from one location to another and each child is encouraged to discover new and unique ways of transporting it. (Examples: On top of head, on back of neck, between legs, etc.)

3. Toss beanbags into barrels of various sizes and from various distances. Begin underhand with preferred hand, then with opposite hand. Then overhand with preferred hand, and with opposite hand. Repeat each one several times.

4. Walk across stage while bouncing playground ball. Begin with preferred hand, then opposite hand. Repeat several times.

Week 2

Thursday

1. Review - Carrying beanbags from one location to another discovering unique ways.

2. Review - Tossing beanbags into barrels of various sizes and from various distances.

3. Bounce playground ball to partner repeatedly with preferred hand, with opposite hand, with both hands.

4. Ball Relay - Divide children as to ability. Make two lines and place a ball in the hands of the child at the head of each line. On signal the children relay the ball down and back up the line by tossing the ball in the air. The line that gets the ball back to the front first is the winner.

5. Game - Call Ball

Week 2

Friday

1. Instruct the children to toss playground balls into barrels of various sizes and from various distances. Begin underhand with preferred hand, then with opposite hand. Then overhand with preferred hand, then with opposite hand.

2. Game - Teacher Ball. One child is "Teacher" and children line up 10 feet from "Teacher" in a straight line. "Teacher" throws playground ball, underhand, to each child in turn. If a child misses, he goes to end of line and child at head of line becomes "Teacher."

3. Walk across stage while bouncing playground ball. Begin with preferred hand, then opposite hand.

4. Review - Identification of body places and parts.

5. Toss playground ball in air to partner using preferred hand, opposite hand, both hands. Begin underhand, repeat activity overhand.

Week 3

Monday

1. Review - Identification of body places and parts in relation to objects.

2. Game - Teacher Ball.

3. Bounce playground ball to partner with preferred hand, opposite hand, both hands.

4. Toss beanbags at vertical targets drawn on wall. Preferred hand, opposite hand. Underhand and overhand.

5. Toss playground ball against wall, let bounce, turn around one full turn and catch. Repeat several times.

Week 3

Tuesday

1. Review - Instruct children to touch body parts with other body parts.

2. Game - Duck, Duck, Goose. Place children in a circle. One child walks around outside of circle touching the other children on the head, saying "Duck." When he reaches a person he wants to chase him, he touches him and says, "Goose." The person touched chases the "Duck" around the circle. The "Duck" must get back to the empty space before he is touched. If touched, he must go into the middle of the circle.

3. Toss beanbags at vertical targets drawn on wall.

4. Toss playground ball against wall, let bounce, turn around one full turn and catch.

5. Toss playground ball into barrels of various sizes and from various

Week 3

Wednesday

1. Ball relay - Tossing in air.

2. Beanbag activities - Walk with beanbag on head, walk slow, walk fast, walk wide, walk narrow, walk low, walk high. Repeat with beanbag on shoulder, on elbow, between legs, etc.

3. Bounce playground ball to partner repeatedly with preferred hand, with opposite hand, with both hands.

4. Bounce playground balls into barrels of various sizes and from various distances.

5. Game. Duck, Duck, Goose.

Week 3

Thursday

1. Ball relay - bouncing.

2. Beanbag activities - Toss beanbag in air and catch with same hand. Toss beanbag in air and catch with opposite hand. Then with both hands. Drop beanbag behind right foot, pick up without bending knees. Then drop behind left foot. Hold beanbag between foot, sit down and roll over backwards, place beanbag on floor behind head. Roll back to a sitting position. Roll backwards again, reach over the head with legs and pick up beanbag with feet and return to sitting position. Toss in air, turn one full turn and catch.

3. Walk across stage while bouncing playground ball. Begin with preferred hand, then with opposite hand.

4. Bounce playground balls into barrels.

5. Game. Call Ball.

Week 3

Friday

1. Beanbag relay.

2. Toss playground ball against wall, let bounce, turn around one full turn and catch.

3. Toss playground ball against wall, let bounce once and catch. Let bounce twice and catch.

4. Toss playground ball to partner in air repeatedly. Begin with preferred hand, opposite hand, both hands.

5. Game. Circle Stride Ball. Players stand in circle. One child is "It" and stands in center. He tries to roll playground ball through the feet of any child in the circle. If he succeeds, he takes the place of the child and this child becomes "It." Children can use only hands to stop the ball.

Week 4

Space and Direction - After the development of body image a child must be able to make judgments in relation to space. He must also develop directionality in order that he might successfully change from his original location to his destination.

Week 4

Monday

1. Introduce activities that might encourage movement exploration. Do not use demonstration.
   a. Be as tall, round, flat, stiff, tall and thin, tall and wide as you can.
   b. Crawl through a tunnel forward, backward, and sidewise.
   c. Point to the wall (chair, mat, box, etc.) farthest away from you (closest), touch it and return to your place.
   d. Step over stick, walk under stick, walk between stick and wall without touching either, walk through maze of sticks placed at varying heights on folding chairs, squeeze through rubber inner tube head first; feet first.
   e. Stand in place, make your feet move fast; slow.
   f. Hop on one foot standing in place, hop on other foot. Hop on one foot moving about, on other foot. Hop on both feet.
   g. Move your hands fast; slow.
   h. Be a chair, tree, wall, ball.

Week 4

Tuesday

1. Laterality in relation to objects.
   a. Place your left side nearest the chair.
   b. Place your back to the window.
   c. Place your right side nearest the chalk board.
   d. Place your right foot on the box.
   e. Place your left hand on the door.
   f. Move so that you are under a chair.

g. Move so that you are between two chairs. (Vary the directions and objects in many different combinations.)

2. Reinforce laterality in relation to objects by tossing beanbags and balls at targets.
   a. Toss beanbags at horizontal and vertical targets on the floor, the wall, and barrels. First with preferred hand, then with opposite hand. Begin underhand, then overhand.

3. Step over stick, walk under stick, walk between stick and wall without touching either. Squeeze through rubber inner tube.

Week 4

Wednesday

1. Review - Laterality in relation to objects.

2. Review - Activities that might encourage movement exploration.

3. Crawl through "L" shaped tunnel forward, backward, sidewise.

4. Place large boxes in the room with geometric figures cut into the sides and ends. Present the child with a geometric figure drawn on a piece of construction paper. The child is to find that shape and enter the box through it. While inside the box present the child with another geometric figure, of which he is to exit from the box.

Week 4

Thursday

1. Instruct the children to point in front of themselves, in back, to the side, to the top, and to the bottom.

2. Repeat this activity in relation to objects in the room.

3. Instruct the children to close their eyes and point to objects in the room.
   a. window
   b. door
   c. balance beam
   d. mirror
   e. floor
   f. waste basket
   g. desk
   h. lights
   i. ceiling
   j. cabinets

4. Instruct the children to point over, under, and to the side of objects.
   a. over the chair
   b. below the window
   c. over the door
   d. above the chalk board
   e. under the chair
   f. between the windows
   g. between the desks
   h. below the chalk board
   i. to the side of the door
   j. to the side of the pictures
   (Repeat these in various combinations.)

5. Reinforce laterality in relation to objects by tossing beanbags and balls at targets.
   a. Toss playground balls at horizontal and vertical targets on the floor, the wall, and barrels.

Week 4

Friday

1. Instruct the children to point in front, in back, to the side, to the top, and to the bottom of themselves and to objects located in the room.

2. Instruct the children to close their eyes and point to objects in the room.

3. Crawl through tunnel forward, backward, sideward.

4. Game. Back-to-Back. The players are arranged in couples. Partners stand back-to-back with elbows linked. One extra player does not have a partner. Upon a signal from the teacher, all players change partners while the extra player attempts to get a partner. One player will be left each time. Develops body image, directionality, and spatial relations.

Week 5

Monday

1. Review - Movement exploration activities.

2. Laterality in relation to objects.

3. Crawl through "L" shaped tunnel forward, backward, sideward.

4. Boxes with geometric figures.

5. Game. Back-to-Back.

Week 5

Tuesday

1. Step over stick, walk under stick, walk between stick and wall without touching either, walk through maze of sticks placed at varying heights on folding chairs. Squeeze through rubber inner tube.

2. Hop on one foot standing in place, hop on other foot. Hop on one foot moving about, hop on other foot. Hop on both feet. Control bounce on rubber inner tube.

3. Toss beanbags at horizontal and vertical targets on the floor, the wall, and barrels.

4. Game. Back-to-Back.

Week 5

Wednesday

1. Review - Laterality in relation to objects.

2. Review - Activities that might encourage movement exploration.

3. Crawl through tunnel forward, backward, sideward.

4. Boxes with geometric figures.

5. Game. Crossing the Brook. Two lines are drawn to represent the banks of the brook. The children run and jump over the brook. Anyone missing the jump and landing in the brook is sent "home" to put on dry shoes and socks; he sits and pretends to do these things, and then re-enters the game. Develops hearing discrimination, directionality, spatial relationship, balance, eye-foot coordination.

Week 5

Thursday

1. Laterality in relation to objects. Point and move to them.

2. Static directionality with other people. The children are instructed by the teacher who stands opposite them to give directions as follows:
   a. touch my right arm.
   b. touch my left elbow.
   c. touch my right knee with your left hand.
   d. touch my left foot with your left foot.
   e. touch my left side.
   f. touch my right shoulder with your left hand. (Continue and use these and other parts in various combinations.)

3. Reinforce laterality and directionality.
   a. Walk balance beam forward, looking at end of beam.

4. Game. Crossing the Brook.

Week 5

Friday

1. Static directionality with other people.

2. Walk balance beam forward, looking at end of beam. Walk beam backwards. Repeat each one several times.

3. Crawl through tunnel forward, backward, sideward. Boxes with geometric figures.

4. Game. Crossing the Brook.

Week 6

Monday

1. Children are instructed to follow an obstacle course. Include obstacles to walk under, to walk between, to crawl through, to step into, etc.
   a. Crawl through tunnel (boxes, chairs, other children).
   b. Walk under stick, step over stick, go between stick and wall.
   c. Go through maze of sticks on folding chairs.
   d. Walk balance beams over and under obstacles.
   e. Go through boxes with openings cut in the shape of geometrical figures.
   f. Crawl through, walk through, and walk on rubber inner tubes.

2. Laterality in relation to objects, point and move to them.

3. The children are instructed to jump and turn in the air toward objects in the room. (Demonstrate jump and turn.)

4. The children are instructed to toss beanbags at barrels of various sizes and from various distances with eyes open, then with eyes closed.

Week 6

Tuesday

1. Review - Obstacle course.

2. The children are instructed to jump and turn in the air toward different sides of the room.
   a. cabinet side
   b. chalk board side
   c. window side
   d. door side

3. To test directional awareness and laterality instruct the children to close their eyes and raise the left hand, point to the side. Raise the right hand, point to the side. Raise the left and right hand and point upward.

4. To test directional awareness and sense of balance instruct the children to close their eyes and raise their right foot, hold for a few seconds. Then left foot.

5. The children are instructed to walk forward on the balance beam and focus upon the end of the beam, objects at the end of the beam, and objects to the right and left of the beam.

Week 6

Wednesday

1. Review - Obstacle Course.

2. The children are instructed to follow directions. Demonstrate as the more difficult drills are presented:
   a. walk forward
   b. walk backward
   c. hop forward
   d. hop backward
   e. hop to the right
   f. hop to the left
   g. hop on left foot
   h. hop on right foot
   i. jump up on two feet and land on one.
   j. jump up on one foot and land on two.
   k. jump over rpoe or rolled mat. Take off on two feet and land on two. Take off on two feet and land on one. Take off on one foot and land on two. Take off on one foot and land on the opposite foot.

3. The children are instructed to walk forward on the balance beam focusing on objects to the right and left of the beam.

Week 6

Thursday

1. Review - Obstacle Course.

2. The children are instructed to jump and turn in the air toward different sides of the room.

3. Review - Walking, hopping, and jumping drills.

4. The children are instructed to walk forward on the balance beam with arms outstretched over head, folded in front, arms behind back, holding ball over head.

Week 6

Friday

1. Review - Walking, hopping, and jumping drills.

2. The children are instructed to crawl through, walk through, walk and control bounce on rubber inner tubes.

3. The children are instructed to walk forward and backward on the balance beam focusing upon objects to the right and to the left of the beam.

4. Game. Crossing the Brook.

Week 7

Balance Activities - The ability to balance is basic to all locomotor tasks. Cratty[1] states that "it is indicated that if a single type of perceptual-motor activity is to be included in a program for educable retardates, tasks intended to enhance balance would be those most welcome."

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[1] Bryant J. Cratty, Movement Activities for Neurologically Handicapped Children and Youth (Freeport, New York: Educational Activities, Inc., 1967), p. 10.

Week 7

Monday

1. Continue evaluation of each child for balance.
   a. Instruct the child to stand on one foot and maintain this position for more than six seconds.
   b. If the initial task is accomplished ask them to maintain a one-foot stand while keeping their arms folded.

2. Static balance on a mat.
   a. Seated balance; children are asked to sit with legs extended, feet together, hands on lap, and remain relatively immobile for increasingly lengthy periods of time.
   b. Hand and knee balance, four points touching the mat.
   c. Hand and knee balance, three points. Each child raises one hand in the air, alternate hands. Raise one leg, alternate legs.
   d. Hand and knee balance, two points. Each child raises left hand and left leg. Cross pattern, each child raises left leg and right arm. Alternate arms and legs.

3. Activities to enhance the use of balance.
   a. Rocking horse - children stand with hands on hips with feet astride. Children lean forward, keeping knees stiff, lift heels from floor. Rock backward lifting toes.
   b. Elephant walk.
   c. Crab walk.
   d. Bear walk.
   e. Bunny hop.
   f. Children walk forward on their knees.
   g. Walk backward on their knees.

4. Game. Crossing the Brook.

Week 7

Tuesday

1. Review - Static balance on a mat.

2. Static balance while standing.
   a. Children balance on tip toes for the count of ten.
   b. Children stand on one foot for the count of five. Alternate feet.
   c. Stand heel to toe on an imaginary line.
   d. One foot balance, knee high.
   e. One foot, arms folded.

f. One foot, eyes closed.
g. One foot, eyes closed, arms folded.
h. Combinations, eyes closed, knee high, arms folded.

3. Review - Activities to enhance the use of balance.

4. Game. Crossing the Brook.

Week 7

Wednesday

1. Review - Activities to enhance the use of balance.

2. Review - Static balance while standing.

3. Dynamic balance.
   a. Children walk forward on balance beam. Walk heel-to-toe with toes pointing straight ahead and focus eyes on end of beam.
   b. Walk forward on balance beam and focus eyes on a point on the wall at eye level.
   c. Walk backward on the balance beam and repeat a and b.
   d. Walk sideways on the balance beam and focus eyes on a point at eye level.

4. Game. Circle-Stride-Ball.

Week 7

Thursday

1. Review - Static balance while standing.

2. Game - The children are instructed to act out different farm animals while the others attempt to guess the animal.

3. Dynamic balance - Balance beam.
   a. Walk forward focusing eyes on end of beam, on point at eye level and end of beam, on points to right and left of beam.
   b. Walk backward repeating a.
   c. Walk sideways focusing eyes on a point at eye level.

4. Game. Circle-Stride-Ball.

Week 7

Friday

1. Review - Static balance on a mat.

2. Review - Static balance while standing.

3. Review - Farm animals.

4. Balance beam activities.
   a. Walk forward. Focus eyes on a point to the right and left of balance beam.
   b. Walk backward. Focus eyes on a point to the right and left of balance beam.
   c. Walk forward. Focus eyes on a point moving in a circular pattern at the end of the beam. (Also backward and sideways.)
   d. Walk forward and backward with eyes closed.

Week 8

Monday

1. Review - Activities that enhance the use of balance.

2. Review - Farm Animals.

3. Balance Beam Activities.
   a. Walk forward on balance beam, slide feet keeping same foot always in front. Alternate lead foot.
   b. Walk backward, slide feet keeping same foot always in back. Alternate lead foot.
   c. Walk forward with arms extended straight out to side, over head, with arms folded, with hands behind back. (Repeat these backward.)

4. Game. Circle-Stride-Ball.

Week 8

Tuesday

1. Review - Balance beam activities of Monday, Week 8.

2. Introduce balance board activities.
   a. Tip forward, balance again. Tip to the right, tip to the left, balance again. Tip backward, balance again.

b. Repeat a with hands over head, arms folded, behind back.
c. Maintain balance while tossing beanbag in air. Catch with same hand, opposite hand, both hands. Begin with preferred hand, then opposite hand.

3. Game. Call Ball.

Week 8

Wednesday

1. Review - Balance beam activities of Monday, Week 8. Also walk forward, backward, and sideways with eyes closed.

2. Review - Balance board activities of Tuesday, Week 8. Also partners on balance boards play catch with beanbags and playground balls. First with beanbags. Toss underhand with preferred hand, then with opposite hand, then with both hands. Repeat with playground balls.

3. A large circle is drawn on the floor. The children are instructed as a group to all:
   a. Walk forward around the circle to the right; to left.
   b. Walk backward around the circle.
   c. Walk the circle forward and backward on their toes; on heels.
   d. Hop forward and backward around the circle on two feet; on one foot.

4. Game. Circle-Stride-Ball.

Week 8

Thursday

1. Review - Balance beam activities of Friday, Week 7.

2. Review - Farm Animals.

3. Review - Balance board activities of Wednesday, Week 8.

4. Review - Circle activities of Wednesday, Week 8.

Week 8

Friday

1. Review - Balance beam activities of Friday, Week 7. Also, instruct the children to walk half-way down the board and turn (180 degrees) and walk the rest of the way backward.

2. Review - Balance board activities of Wednesday, Week 8.

3. Review - Circle activities of Wednesday, Week 8.

4. Game. Crossing the Brook.

Week 9

Monday

1. Balance beam.
   a. Review forward and backward walk on the beam with visual stress.
   b. Review forward and backward walk with eyes closed.
   c. Review walking forward halfway, turn 180 degrees, walk rest of way backward.
   d. Also walk halfway, turn 360 degrees, and continue to end of beam.

2. Review - Walking, hopping, and jumping drills of Wednesday, Week 6.

3. Review - Obstacle course of Monday, Week 6.

4. Balance board activities.
   a. Use boards as stepping stones.
   b. Balance on one foot, begin with preferred foot, then opposite foot.
   c. While balancing on one foot lean forward until body is parallel to floor and hold with arms outstretched to side, forward.
   d. Toss beanbag in air, catch with same hand, opposite hand, both hands.
   e. Repeat d with playground ball.

Week 9

Tuesday

1. Review - Balance beam activities of Monday, Week 9.

2. Review - Walking, hopping, and jumping drills of Wednesday, Week 6.

3. Review - Obstacle course of Monday, Week 6.

4. Review - Balance board activities of Monday, Week 9.

Week 9

Wednesday

1. Balance beam.
   a. Walk forward with an eraser balanced on head, on back of outstretched hands to side, in front, on shoulder. Repeat using beanbag.
   b. Walk forward holding 5 pound weight in right hand, left hand. Repeat walking beam backward.
   c. Repeat a and b with eyes closed.

2. Review - Balance board activities tossing beanbags and playground balls.

3. Game. Crossing the Brook.

Week 9

Thursday

1. Review - Balance beam activities of Wednesday, Week 9.

2. Review - Static balance while standing.

3. Balance board.
   a. Review - Tossing beanbags and balls.
   b. Balance - Bounce playground ball with right hand, left hand, both hands.

Week 9

Friday

1. Balance Beam.
   a. Walk forward balancing object (eraser or beanbag) on head, on shoulder, on back of hands of outstretched arms.
   b. Walk forward halfway down beam, turn 180 degrees and continue backwards to end of beam. (Repeat 360 degrees.)
   c. Walk forward and backward with 5 pound weight in hand. Alternate hands.
   d. Walk forward and pick up object (beanbag or eraser) placed on top and in middle of beam, then proceed to end of beam.

2. Review - Balance board - Tossing beanbags, tossing and bouncing playground balls.

3. Review - Static balance while standing.

Week 10

Locomotor Activities and Balance - Locomotor activities aid the child in the beginning development of movement patterns that will be essential in later life.

Week 10

Monday

1. Review - Balance beam activities for Friday, Week 9. Also walk forward to middle of beam, pick up object (eraser or beanbag) turn 180 degrees and continue backward to end of beam.

2. Instruct the children to assume hands and knees position. Slowly move forward with right arms and left legs moving simultaneously; left arms and right legs.

3. Repeat 2 in backward direction.

4. Hands and knees position move sideways.

5. Review - Circle activities of Wednesday, Week 8.

Week 10

Tuesday

1. Balance beam.
   a. Walk forward, backward, and sideways over rope arranged in "S" shape.
   b. Walk forward, backward, and sideways under three foot high stick, over one foot high stick.
   c. Walk forward, backward, and sideways, alternating 5 pound weight from one hand to the other every second step.

2. Gross body movements.
   a. Hopping on right foot ten feet, hopping on left foot ten feet, skipping for fifteen feet.
   b. Galloping back and forth, also in circular pattern.

3. Crawling on floor on hands and knees with hand prints painted on floor.
   a. Proceed in regular pattern.
   b. Proceed in straight line pattern. (Hand prints drawn in straight line.)

   Have children verbalize about activity. Repeat "right" when right hand touches, " left" when left hand touches.

4. Knee crawling (walking on knees) in upright position using vigorous shoulder action.

Week 10

Wednesday

1. Review - Balance beam activities for Tuesday, Week 10.

2. Review - Gross body movements for Tuesday, Week 10.

3. Review - Crawling on floor on hands and knees for Tuesday, Week 10. Also footprints.

4. Jumping - in place, straight up with arm swing.

Week 10

Thursday

1. Review - Balance beam activities for Friday, Week 9.

2. Gross body movements.
   a. Practice walking rhythmically swinging arms to side.
   b. Practice walking fast, walking slowly.
   c. Practice running fast, running slowly.
   d. Run with hands on hips, over heads, behind back.
   e. Hop in place on one foot, other foot, two feet.
   f. Hopping in rhythm. Symmetrical and asymmetrical patterns. Hop two times on one foot, two times on other foot, one and two, three and three, etc.
   g. Skipping and galloping.

Week 10

Friday

1. Review - Balance beam activities for Friday, Week 9.

2. Review - Gross body movements for Thursday, Week 10.

3. Game. Back-to-Back.

Week 11

Airborne and Balance Activities

Monday

1. Jumping
   a. Jump straight up, using arm swing.
   b. Jump over a line with both feet forward, backward, sideways. Over a rope held one foot high. Over a rolled up mat.
   c. Jump over several lines succession with both feet forward, backward, sideways.
   d. Jump from varying heights (4 inches, 6 inches, 12 inches), with proper landing.
   e. Jump over one foot high rope. Take off on two feet, land on one. Take off on one, land on two. Take off on left, land on right. Take off on right, land on left.

2. Hopping and Skipping.
   a. Hop in place on one foot. Alternate feet.
   b. Hop in place on one foot. Turn 1/4 turn on each hop. Alternate feet.
   c. Hop on one foot forward, backward, and sideways over a line. Alternate feet.
   d. Hop on one foot forward, backward, and sideways over a succession of lines. Alternate feet.
   e. Hop on right foot for 10 feet, on left foot for 10 feet, and then skip for 10 to 15 feet.

3. Trampoline Activities. (Bed springs and mat)
   a. Control bounce. Feet do not leave mat.
   b. Control bounce. Feet leaving mat.
   c. Continuous bounce on hands and knees.
   d. Continuous bounce on seat.
   e. Starting and stopping on command. Teach child to stop by bending knees.

Week 11

Tuesday

1. Review - Jumping Activities of Monday, Week 11.

2. Review - Hopping and skipping activities of Monday, Week 11.

3. Review - Trampoline activities of Monday, Week 11.

Week 11

Wednesday

1. Review - Hopping and skipping activities of Monday, Week 11.

2. Trampoline Activities.
   a. Clapping - in front of body, behind back, from front to back, and between legs in rhythm with jump.
   b. Moving arms up and down at side, and in front in rhythm with jump.
   c. Swinging arms at sides, forward and backward and across front of body and back.
   d. Place hands on shoulders, then move hands out and back in various directions keeping time with jump.

3. Balance Beam Activities.
   a. Review - Tuesday, Week 10.

Week 11

Thursday

1. Review - Jumping activities of Monday, Week 11.

2. Review - Trampoline activities of Wednesday, Week 11.

3. Balance beam activities.
   a. Walk forward balancing beanbag on head, shoulder, beanbags on backs of hands. Walking beam forward and backward.
   b. Walk forward halfway down beam, kneel and touch beam with knee, then continue to end of beam. (Also pick up objects off beam.)
   c. Catch ball thrown in air by teacher while walking forward on beam. Catch ball thrown on bounce. (Also toss beanbags.)

Week 11

Friday

1. Review - Hopping and skipping activities of Monday, Week 11.

2. Trampoline Activities.
   a. Control bounce with feet apart, then together.
   b. Perform jumping jacks.
   c. "Mexican Hat Dance" - legs alternating front and back.
   d. Alternate jumping - one jump on each foot, two jumps on each foot, two on one foot and one on the other, reverse.
   e. On one foot for extended periods of time. (15, 30, 45, and 60 seconds).

3. Review - Balance beam activities of Thursday, Week 11

Week 12

Monday

1. Review - Jumping activities of Monday, Week 11.

2. Review - Trampoline activities of Friday, Week 11.

3. Balance beam activities.
   a. Forward and backward walk on balance beam holding ball over head, behind back, out front with arms outstretched.
   b. Catch ball thrown in air by teacher while walking forward on balance beam. Toss back to teacher. Catch ball on bounce, throw back on bounce. (Also beanbags.)
   c. Bounce ball with right hand while walking forward on beam. Left hand.

Week 12

Tuesday

1. Review - Hopping and skipping activities of Monday, Week 11.

2. Trampoline Activities.
   a. Control bounce.
   b. Bounce, perform quarter turn, half turn, attempt full turn.
   c. Bounce, bring knees to chest, land on feet.
   d. Bounce, perform jumping jack.
   e. Bounce, perform knee drop, return to feet.
   f. Bounce, perform seat drop, return to feet.

3. Review - Balance beam activities of Monday, Week 12.

Week 12

Wednesday

1. Review - Jumping activities of Monday, Week 11.

2. Review - Trampoline activities of Tuesday, Week 12.

3. Review - Balance beam activities of Monday, Week 12.

Week 12

Thursday

1. Review - Trampoline activities of Wednesday, Week 11.

2. Review - Balance beam activities of Thursday, Week 11.

3. Game. Crossing the Brook.

Week 12

Friday

1. Review - Hopping and skipping activities of Monday, Week 11.

2. Review - Trampoline activities of Tuesday, Week 12.

3. Review - Balance beam activities of Monday, Week 12.

Week 13

Form perception - The following activities should be included in a perceptual-motor training program to develop the ability to recognize various shapes and forms necessary to enhance academic achievement.

Week 13

Monday

1. Use chalk or tape to make the various geometrical figures on the floor. Instruct the children to walk the lines forming circles, squares, and triangles. Walk them forward, backward, sideways. Move first in clockwise direction, then counterclockwise.

2. Form the various geometrical shapes with balance beams. Move first in a clockwise direction, then counterclockwise. Walk forward, backward, and sideways in both directions. (Encourage the children to verbalize about the activity.)

3. Create the various geometrical shapes by using the subjects. Instruct the children to stand and form the shapes as a group. To lie and form the shapes as a group. Then pair off and attempt to form the shapes.

Week 13

Tuesday

1. Use chalk or tape to make the various geometrical shapes on the floor. Instruct the children to hop forward on the lines. Moving first in clockwise direction, then counterclockwise. Hop first on both feet, then right, then left.

2. Review - Geometrical shapes with balance beams for Monday, Week 13.

3. Review - Creating the various geometrical shapes by using the subjects for Monday, Week 13.

Week 13

Wednesday

1. Create the geometrical shapes with small sticks glued on cardboard. Instruct the children to trace around the figures with their fingers repeatedly. (Encourage the children to verbalize about the activity.)

2. Instruct the children to make shapes with loose toothpicks or "pick-up sticks." (Encourage the children to verbalize about the activity.)

3. Place round, square, and triangular objects into a box and ask children to reach in, feel and tell which shape they are holding. Instruct the children to remove the objects to see if they were correct. Encourage the children to verbalize about the object they are holding. Try to secure as many objects as you possibly can from the child's everyday world.

4. Game. Duck, Duck, Goose.

Week 13

Thursday

1. Review - No. 2, Tuesday, Week 13.

2. Review - No. 3, Tuesday, Week 13.

3. Review - No. 3, Wednesday, Week 13.

4. Game. Duck, Duck, Goose.

Week 13

Friday

1. Review - No. 2, Tuesday, Week 13.

2. Instruct the children to make shapes with loose toothpicks or "pick-up sticks." Separate the children so that they may work independently. Instructions are: "Let's make a triangle." Check to see that everyone has correct shape.

3. Review - No. 3, Wednesday, Week 13.

4. Game. Duck, Duck, Goose.

Week 14

Hand-eye, foot-eye coordination - The following activities will provide opportunities for the development of the coordination of eyes, hands, and feet which will enhance achievement in many classroom experiences.

Week 14

Monday

1. Balloon, beanbag, and playground ball activities.
   a. Catch ball rolled on floor. Repeat several times with partner.
   b. Catch balloon thrown in air. Repeat several times with partner.
   c. Catch playground ball on bounce and in air. Repeat several times with partner.
   d. Catch beanbag tossed at close range. Catch with both hands, right-hand, left hand. Repeat each one several times with partner.

e. Bat inflated balloon in the air. See how long you can keep it in the air.

2. Hit whiffle ball off batting tee with bat. Repeat several times.

3. Game. Call ball with balloon. Instruct the children to stand in a circle. Have one child stand in the center of the circle. Have him bat a balloon in the air calling the name of another child in the circle. The child called must get into the circle and keep the balloon in the air while calling another name.

Week 14

Tuesday

1. Review - No. 1, Monday, Week 14.

2. The children are instructed to toss beanbags and playground balls at targets drawn on the floor and the wall, begin at close range gradually increasing the distance.

3. Review - No. 2, Monday, Week 14.

Week 14

Wednesday

1. Review - No. 1, Monday, Week 14.

2. Instruct the children to kick a playground ball from a spot on the floor. Kick a playground ball rolled to them. Repeat each one several times, first with the preferred foot, then with the opposite foot.

3. Review - No. 2, Monday, Week 14.

4. Game. Call Ball with balloon.

Week 14

Thursday

1. Review - No. 2, Tuesday, Week 14.

2. Review - No. 2, Monday, Week 14. Also hit whiffle ball, pitched to them by teacher. Repeat several times.

3. Instruct the children to bounce playground balls in front of themselves and catch them with both hands. Dribble the ball in one spot using the right hand, the left hand. Dribble continuously alternating hands.

4. Game. Call ball using playground ball.

Week 14

Friday

1. Review - No. 1, Monday, Week 14.

2. Review - No. 3, Thursday, Week 14.

3. Review - No. 2, Wednesday, Week 14.

4. Review - No. 2, Thursday, Week 14.

Week 15

Monday

1. Ask children to bounce shuttle in the air with a badminton racquet.

2. Ask children to throw shuttle up and strike it with racquet.

3. Ask children to strike shuttle thrown by teacher.

4. Bat inflated balloons in air with open hands. See who can keep it in air the longest.

5. Ask the children to strike whiffle ball on batting tee with a bat.

6. Ask the children to strike a playground ball lying on the ground with a bat.

7. Strike a playground ball rolled to them with a bat.

8. Strike a pitched ball with bat (progress from larger to smaller ball).

Week 15

Tuesday

1. Ask the children to bounce playground ball in front of themselves and catch them with both hands.

2. Dribble the ball in one spot using the right hand, left hand, alternating hands.

3. Dribble the ball walking across stage with right hand, left hand. Repeat dribbling while running across stage.

4. Ask the children to toss beanbags and balls at targets drawn on floor and the wall.

5. Throw playground ball against wall and catch in air, let bounce once, let bounce twice, let bounce turn around and catch.

6. Game. Call ball using balloon.

Week 15

Wednesday

1. Repeat Monday, Week 15

Week 15

Thursday

1. Repeat Tuesday, Week 15.

Week 15

Friday

1. Catch ball rolled on floor, thrown in air, thrown high in air, on bounce.

2. Catch balloon thrown in air.

3. Toss beanbags and balls at various size barrels, from various distances.

4. Review, No. 4, Monday, Week 15.

5. Review, No. 5 - 8, Monday, Week 15.

6. Instruct children to draw themselves. Supply crayons and large paper.

APPENDIX B

CONTENT AND DESCRIPTION OF MUSIC PROGRAM

Week 1

Action Song. "I go to Meet My Friend"

a. Present song and activities with record. Children listen and watch instructor several times. Stop record and talk about what is going to take place. The attention span will benefit from group discussion of activities.

b. Children have to learn to listen to instructions given in the song. If they cannot learn to listen they will not be able to participate in activities.

c. A "leader" is chosen each time to lead the group in "Walking to See My Friend" - all children are able to do this unless there is a physical handicap - "Skipping" to see my friend is difficult for some brain-damaged children - hopping is another difficult task - in working with this activity development of gross body coordination, helps develop rhythms and body concepts. Self confidence is developed when child is chosen to "Lead" group. As the song progresses - days of the week are brought in - example! Sunday, I walk - Monday, I hop - Tuesday I tiptoe - etc. Without even being aware of this they are learning the days and most can repeat them for you without difficulty or help from instructor.

Week 2

Action Song. "Big Orange Bus"

a. Present song and motions first with record. Again instructor must have attention of students and learning to listen is practiced.

b. Children say words and do motions, example: "Whirl go the wheels of the Big Orange bus" - the visual memory and hand-eye coordination of the wheels going round and round comes to mind to o and the motion of the wheels imitated with hands helps the child to understand and form the concept of bus wheels going around in a forward circular motion.

c. Children sing along with record and imitate motions done by instructor.

d. Review song from week 1.

Week 3

Request time.

a. Bring piano to classroom.

b. Let each child choose a song to sing, and let them lead the class in singing. There are many children who are withdrawn and shy. This activity usually starts out with the most active and outgoing students doing all the "requesting" - but if this is practiced long enough and the shy withdrawn child sees just how much fun the others are having he too will participate. He may not "LEAD" the group but if you can get him to at least request a song some progress has been made and the child has a better Self image.

c. Request time simply tests children's "recall" -- they are remembering the names of songs - the words and melody.

d. If time permits instructor chooses a song worked on during week 1 or 2 and reviews with children.

Week 4

Tape recording session.

a. Much like request time -- getting child to come to front of class and sing alone will develop self confidence and help build a better image of themselves. When child hears his name and his song "played-back" many different reactions are noted. All of them are happy reactions and much laughter at themselves teaches them to be able to laugh with others and not feel angry because everyone is laughing.

b. Children can learn creative criticism.

Week 5

Learning colors. (This action song has been created with the purpose of getting children better acquainted with the main colors.)

a. Have flags of blue, green, yellow, etc. Have children as far away from each other as possible.

b. Talk about things that are blue, green, etc.

c. Activity teaches them to concentrate and listen. As your color is sung, you must wave your flag in rhythm with the music!

d. Before starting this song, call out colors with emphasis, and at the same time point to child holding specified color.
   1. Speak words (no music) child - run wave their flag.
   2. Feet together, arms down at side, make flags flutter, by moving wrist.
   3. Blue, Blue - green green - etc.

   Child holding that color quickly raises flags above head on the first word - lower it on second word.

e. Play record slowly and gradually increase speed so as to establish a good rhythmic pattern.

Week 6

Exercise Song.

a. Show pictures of trees. Go outside and look at trees. Point out roots are in ground, branches are spread out.

b. Tell children to "pretend" body is a tree, feet are roots - legs and body are trunks - arms are branches - fingers are leaves falling down. DEVELOPS body image.

c. Say words - have children imitate teacher. This activity teaches Special relations - develop hand, eye coordination - teaches to listen and follow instructions.
   With fingers as "leaves falling" helps develop finger and hand dexterity and muscle control. All children can be helped in this area.

d. Play record and begin singing and using motions.

   If time permits review.

Week 7

Dance Interpretation. "The Sun and the Children"

a. Tell story of song to children - explain how to use facial expressions. This expressive movement has a calming influence and also gives controlled relaxation.

b. Play record and instructor goes through motions as children <u>listen</u> and <u>watch.</u>

c. Have children lie down on floor on their sides, both knees slightly bent - both hands resting against right cheek under the head. They are taught patience by remaining very still - as story begins children wake up slowly and rub eyes - stretch out - and fall back asleep. The sun becomes very "angry" and the lazybones are asked again to wake up! As activity progresses all body muscles are exercised.

d. Activity teaches awareness of the body and child learns to project himself and make various left-right discriminations.

e. Play record and do motions with instructor.

Week 8

Telling time. Action song - Purpose to give children an idea of how to tell time - at least the hours.

a. Show children a picture and model of a clock with movable hands that can be manipulated from the back. This exercise is a combination of concentration and co-ordination.

b. Words spoken without music.

c. Clock movement exercised in two ways: (1) Children imagine themselves to be a clock - (arms are used for hands of clock). The other way is for the children to perform the clock actions as THEY WOULD SEE A CLOCK. In this latter instance, you reverse the arm movements.

d. (1) In having children "pretending" to be clocks - large muscle coordination is exercised and development of body image or awareness. Child is learning movements of left-right dimensions.
(2) In having children work hands of clock they are using hand-eye coordination, and helps reestablish and strengthen hand and finger use and sharpen muscle control.

Week 9

IMITATION. Purpose to promote a quick response on the children by inspiring them to follow directions and think as quickly as they can.

a. All the way through this exercise instructor does motions first and then the children "copy." Instructor faces class.

b. Play record and children begin exercise with you.

c. This exercise requires concentration, listening, watching and good coordination. Good rhythmic pattern is established - hand-eye coordination - gross body coordination, as well as body awareness and development of individual body strengths and coordination resulting in bilateral training in uses of hands, arms, legs so that child becomes ambidextrous. Much can be accomplished through daily exercises to increase response of body usages. And as a result will gain confidence in ability to perform and have success in building better self image!

d. Have each child come to front of class and lead the group in activities. This will help the child build more self-confidence. Also, instructor can determine and help improve child's ability to recall. This helps instructor detect visual or hearing problems that child may have.

Week 10

"The Alphabet Song." - rhythmic-action song, helpful exercise for getting acquainted with the alphabet.

a. Make posters (example) A-B-C-D-E - A for Apple, B for Bee, C for Cat, D for Dog. "It's as easy as can be, I can say the A B C's." Prepare large pieces of cardboard, on one side draw apple with an A at the side of the drawing, follow same pattern with other letters. If possible drawings should be in mind colors - cut out and pasted on cardboard. Helps hand-eye coordination also hand and finger development and dexterity.

b. After each child has made A-B-C etc. On cardboard - make letters in the air, beginning at bottom of left hand corner and going up - then down the other side - then across the middle from left to right. This exercise brings visual memory of how letters look - and teaches differentiality in distinguishing between A's and B's (which comes first) and laterality in using arm and fingers to move from left to right.

c. Play record - giving each child a different letter. Concentration is needed to be ready to step forward as your letter is sung.

Week 11

Rhythmic Counting - Concentration (Slow learning children can count up to the number twenty or higher, but many do not understand HOW MANY each number symbolizes.)

a. Prepare large pieces of white cardboard with number cut out in black paper - at the bottom of the number large black dots corresponding to the number. Visual Perception and Differentialities in numbers will be exercised in this activity.

b. Child picks a number, example: Number five. Shows card, child counts to five aloud - then counts with music. Other children clap - one, two, three, four, five. This inspires children to move to the rhythm of music and in most cases, improves co-ordination, observation and concentration. Rhythmics help to free children of their motor defects.

c. Clapping and stamping feet in rhythm with the music along with singing together brings excitement and joy to the children.

d. Play records - concentration and listening habits are formed along with development of rhythms and body coordination. Cards are numbered up to 10 - and each child has his number and the responsibility is placed on child to step forward when his number is sung.

Week 12

GOOD MANNERS - An exercise and activity which inspires children in having thoughtfulness for others without "lecturing" them. At the same time has a rhythmic beat which teaches coordination and concentration.

a. Discuss good manners.

b. Sing song to children on good manners, instructor does actions with children for them to feel importance of good manners.

c. Children will learn with the help of this song.

Week 13

LOOBY-LOO - (Helps children have better conception of shapes) -- example: The Circle.

a. Show pictures of circles and discuss things that are "round."

b. Draw circles on chalk board's on poster paper. If possible have round table and have children feel along edges of the table.

c. Join hands and form a circle. Say words with children and walk through motions.

d. Use colors in position to enhance laterality and directionality -

example: Blue bands on left arm and leg - red bands on right arm and leg - practice with tapes, then remove at end of week to determine whether or not child has learned difference in left and right.

e. This activity teaches following instructions, directionality, body concepts.

Week 14

Action Song: "What's Inside of Me?" (body concept)

a. Have picture of boy and girl, picture of where heart, stomach, lungs are located.

b. Discuss these parts of the body and how important they are.

c. Play record, let children sing along.

d. Develops self concept and confidence.

Week 15

Review.

a. Go over every activity we have learned.

b. Instructor do as little as possible to determine how much carry over the children have.

APPENDIX C

TEACHER RATING SCALE

NAME _____ AGE _____ SEX _____

GRADE _____ SCHOOL _____ DATE _____

RATED BY _____ TITLE _____

DIRECTIONS: Please rate each child with regard to the following items. On Friday of each respective week place the number of the most descriptive statement in the space opposite the appropriate week. The descriptive statements are as follows:

Number 1. You have not noticed this at all.

Number 2. You have noticed this to a slight degree.

Number 3. You have noticed this to a considerable degree.

Number 4. You have noticed this to a large degree.

Number 5. You have noticed this to a very large degree.

I. CLASSROOM ACTIVITIES

1. Does not enjoy school.

Wk.	1. ____	4. ____	7. ____	10. ____	13. ____
	2. ____	5. ____	8. ____	11. ____	14. ____
	3. ____	6. ____	9. ____	12. ____	15. ____

2. Cannot follow directions.

Wk.	1. ____	4. ____	7. ____	10. ____	13. ____
	2. ____	5. ____	8. ____	11. ____	14. ____
	3. ____	6. ____	9. ____	12. ____	15. ____

3. Gives inappropriate responses.

Wk.	1. ____	4. ____	7. ____	10. ____	13. ____
	2. ____	5. ____	8. ____	11. ____	14. ____
	3. ____	6. ____	9. ____	12. ____	15. ____

4. Does not show imagination.

Wk.	1. ____	4. ____	7. ____	10. ____	13. ____
	2. ____	5. ____	8. ____	11. ____	14. ____
	3. ____	6. ____	9. ____	12. ____	15. ____

5. Does not remember things.

Wk.	1. ____	4. ____	7. ____	10. ____	13. ____
	2. ____	5. ____	8. ____	11. ____	14. ____
	3. ____	6. ____	9. ____	12. ____	15. ____

6. Is easily distracted, lacks continuity of effort.

Wk.	1. ____	4. ____	7. ____	10. ____	13. ____
	2. ____	5. ____	8. ____	11. ____	14. ____
	3. ____	6. ____	9. ____	12. ____	15. ____

7. Shows poor form and organization on written tasks.

Wk.	1 ____	4. ____	7. ____	10. ____	13. ____
	2. ____	5. ____	8. ____	11. ____	14. ____
	3. ____	6. ____	9. ____	12. ____	15. ____

8. Is frequently absent from school.

Wk.	1. ____	4. ____	7. ____	10. ____	13. ____
	2. ____	5. ____	8. ____	11. ____	14. ____
	3. ____	6. ____	9. ____	12. ____	15. ____

9. Drawings and paintings are messy.

Wk.	1. ____	4. ____	7. ____	10. ____	13. ____
	2. ____	5. ____	8. ____	11. ____	14. ____
	3. ____	6. ____	9. ____	12. ____	15. ____

10. Accidently runs into people and objects.

Wk.	1. ____	4. ____	7. ____	10. ____	13. ____
	2. ____	5. ____	8. ____	11. ____	14. ____
	3. ____	6. ____	9. ____	12. ____	15. ____

11. Appears tense.

Wk.	1. ____	4. ____	7. ____	10. ____	13. ____
	2. ____	5. ____	8. ____	11. ____	14. ____
	3. ____	6. ____	9. ____	12. ____	15. ____

12. Complains about assigned tasks.

Wk.	1. ____	4. ____	7. ____	10. ____	13. ____
	2. ____	5. ____	8. ____	11. ____	14. ____
	3. ____	6. ____	9. ____	12. ____	15. ____

13. Assigned tasks are not done or incomplete.

Wk.	1. ____	4. ____	7. ____	10. ____	13. ____
	2. ____	5. ____	8. ____	11. ____	14. ____
	3. ____	6. ____	9. ____	12. ____	15. ____

14. Does not exhibit eagerness to get to school each morning.

Wk.	1. ____	4. ____	7. ____	10. ____	13. ____
	2. ____	5. ____	8. ____	11. ____	14. ____
	3. ____	6. ____	9. ____	12. ____	15. ____

COMMENTS: _____

_____

_____

II. PERSONAL HEALTH HABITS

1. Does not exhibit neat personal appearance.

Wk.										
	1. ____	4. ____		7. ____		10. ____		13. ____		
	2. ____	5. ____		8. ____		11. ____		14. ____		
	3. ____	6. ____		9. ____		12. ____		15. ____		

2. Appears nervous.

Wk.										
	1. ____	4. ____		7. ____		10. ____		13. ____		
	2. ____	5. ____		8. ____		11. ____		14. ____		
	3. ____	6. ____		9. ____		12. ____		15. ____		

3. Does not exhibit acceptable eating habits.

Wk.										
	1. ____	4. ____		7. ____		10. ____		13. ____		
	2. ____	5. ____		8. ____		11. ____		14. ____		
	3. ____	6. ____		9. ____		12. ____		15. ____		

4. Does not exhibit neat arrangement of materials and care of personal belongings.

Wk.										
	1. ____	4. ____		7. ____		10. ____		13. ____		
	2. ____	5. ____		8. ____		11. ____		14. ____		
	3. ____	6. ____		9. ____		12. ____		15. ____		

COMMENTS: _____

_____

_____

III. PHYSICAL EDUCATION PARTICIPATION

1. Does not participate enthusiastically in physical activities.

Wk. 1.____ 4.____ 7.____ 10.____ 13.____
2.____ 5.____ 8.____ 11.____ 14.____
3.____ 6.____ 9.____ 12.____ 15.____

2. Shows poor sportsmanship.

Wk. 1.____ 4.____ 7.____ 10.____ 13.____
2.____ 5.____ 8.____ 11.____ 14.____
3.____ 6.____ 9.____ 12.____ 15.____

3. Shows poor coordination in large muscle activities.

Wk. 1.____ 4.____ 7.____ 10.____ 13.____
2.____ 5.____ 8.____ 11.____ 14.____
3.____ 6.____ 9.____ 12.____ 15.____

4. Demonstrates poor hand-eye, foot-eye coordination.

Wk. 1.____ 4.____ 7.____ 10.____ 13.____
2.____ 5.____ 8.____ 11.____ 14.____
3.____ 6.____ 9.____ 12.____ 15.____

5. Demonstrates poor balance and body control.

Wk. 1.____ 4.____ 7.____ 10.____ 13.____
2.____ 5.____ 8.____ 11.____ 14.____
3.____ 6.____ 9.____ 12.____ 15.____

6. Avoids physical contact.

Wk. 1.____ 4.____ 7.____ 10.____ 13.____
2.____ 5.____ 8.____ 11.____ 14.____
3.____ 6.____ 9.____ 12.____ 15.____

7. Gets hurt in physical play.

Wk.	1.____	4.____	7.____	10.____	13.____
	2.____	5.____	8.____	11.____	14.____
	3.____	6.____	9.____	12.____	15.____

8. Complains about having to continue to play.

Wk.	1.____	4.____	7.____	10.____	13.____
	2.____	5.____	8.____	11.____	14.____
	3.____	6.____	9.____	12.____	15.____

9. Expresses a poor general attitude about physical activity.

Wk.	1.____	4.____	7.____	10.____	13.____
	2.____	5.____	8.____	11.____	14.____
	3.____	6.____	9.____	12.____	15.____

10. Is not willing to play with opposite sex.

Wk.	1.____	4.____	7.____	10.____	13.____
	2.____	5.____	8.____	11.____	14.____
	3.____	6.____	9.____	12.____	15.____

COMMENTS: _____

_____

_____

IV. SOCIAL DEVELOPMENT

1. Projects poor body image (does not know own body parts and usage.)

Wk.	1.____	4.____	7.____	10.____	13.____
	2.____	5.____	8.____	11.____	14.____
	3.____	6.____	9.____	12.____	15.____

2. Lacks confidence in self.

Wk.	1. ____	4. ____	7. ____	10. ____	13. ____
	2. ____	5. ____	8. ____	11. ____	14. ____
	3. ____	6. ____	9. ____	12. ____	15. ____

3. Is not willing to attempt new activities.

Wk.	1. ____	4. ____	7. ____	10. ____	13. ____
	2. ____	5. ____	8. ____	11. ____	14. ____
	3. ____	6. ____	9. ____	12. ____	15. ____

4. Does not interact with peers readily.

Wk.	1. ____	4. ____	7. ____	10. ____	13. ____
	2. ____	5. ____	8. ____	11. ____	14. ____
	3. ____	6. ____	9. ____	12. ____	15. ____

5. Fails to initiate independent activity.

Wk.	1. ____	4. ____	7. ____	10. ____	13. ____
	2. ____	5. ____	8. ____	11. ____	14. ____
	3. ____	6. ____	9. ____	12. ____	15. ____

6. Exhibits hyperactive behavior.

Wk.	1. ____	4. ____	7. ____	10. ____	13. ____
	2. ____	5. ____	8. ____	11. ____	14. ____
	3. ____	6. ____	9. ____	12. ____	15. ____

7. Becomes upset easily (either withdraws, cries, or displays temper.)

Wk.	1. ____	4. ____	7. ____	10. ____	13. ____
	2. ____	5. ____	8. ____	11. ____	14. ____
	3. ____	6. ____	9. ____	12. ____	15. ____

8. Cannot accept constructive criticism.

Wk.					
	1. ____	4. ____	7. ____	10. ____	13. ____
	2. ____	5. ____	8. ____	11. ____	14. ____
	3. ____	6. ____	9. ____	12. ____	15. ____

9. Appears unhappy.

Wk.					
	1. ____	4. ____	7. ____	10. ____	13. ____
	2. ____	5. ____	8. ____	11. ____	14. ____
	3. ____	6. ____	9. ____	12. ____	15. ____

10. Rejects classmates in hostile manner.

Wk.					
	1. ____	4. ____	7. ____	10. ____	13. ____
	2. ____	5. ____	8. ____	11. ____	14. ____
	3. ____	6. ____	9. ____	12. ____	15. ____

11. Complains others do not like him.

Wk.					
	1. ____	4. ____	7. ____	10. ____	13. ____
	2. ____	5. ____	8. ____	11. ____	14. ____
	3. ____	6. ____	9. ____	12. ____	15. ____

12. Shows many fears.

Wk.					
	1. ____	4. ____	7. ____	10. ____	13. ____
	2. ____	5. ____	8. ____	11. ____	14. ____
	3. ____	6. ____	9. ____	12. ____	15. ____

13. Tells falsehoods.

Wk.					
	1. ____	4. ____	7. ____	10. ____	13. ____
	2. ____	5. ____	8. ____	11. ____	14. ____
	3. ____	6. ____	9. ____	12. ____	15. ____

14. Explodes under stress.

Wk:	1. ____	4. ____	7. ____	10. ____	13. ____
	2. ____	5. ____	8. ____	11. ____	14. ____
	3. ____	6. ____	9. ____	12. ____	15. ____

15. Takes things which do not belong to him.

Wk.	1. ____	4. ____	7. ____	10. ____	13. ____
	2. ____	5. ____	8. ____	11. ____	14. ____
	3. ____	6. ____	9. ____	12. ____	15. ____

16. Shows little respect for authority.

Wk.	1. ____	4. ____	7. ____	10. ____	13. ____
	2. ____	5. ____	8. ____	11. ____	14. ____
	3. ____	6. ____	9. ____	12. ____	15. ____

COMMENTS: _____

_____

_____

APPENDIX D
DAILY ANECDOTAL RECORD

Name_____ Total No. Minutes _____
Date_____

Activities	Time Involved	Improvement Comments	Performance Poor	Fair	Good	Excellent

	Positive 1	2	3	4	Negative 5
1. Follow Directions					
2. Shows Imagination					
3. Appears Enthusiastic					
4. Is cooperative					
5. Appears Happy					
6. Appears Relaxed					
7. Appears Confident					
8. Interacts Readily					
9. Shows Respect for Authority					
10. Exhibits Good Self Concept					

Comments:

APPENDIX E

EQUIPMENT AND SUPPLIES

Drawing paper

Crayons

Tumbling mat

Tunnels (cardboard boxes, chairs, etc.)

Rubber inner tubes (tractor)

Balance beams (10' x 2" x 4")

Balance boards (24" diameter)

Large appliance cardboard boxes

Books, erasers, etc. (for balance on beams)

Rope

Bean bags

Playground balls (8 inch)

Balloons

Volleyballs

Soccerballs

Handprints and Footprints (cut from paper)

Door steps (wood frame)

Trampoline (bed springs and mat)

Tooth picks and pickup sticks (geometrical shapes)

Wooden blocks in geometrical shapes

Targets (constructed from cardboard

Large cardboard barrels (various sizes)

Waste paper baskets

Ice cream cartons (one gallon)

Badminton racquets and shuttles

Bats (baseball) Whiffle balls

Batting tees

APPENDIX F

BACKGROUND INFORMATION

NAME:_____

MEDICAL HISTORY:

EDUCATIONAL BACKGROUND:

VITA

The investigator, Joe Marlan Elrod, was born August 20, 1941, in Blount County, Alabama, the son of Mr. and Mrs. J. T. Elrod.

He attended Gadsden, Alabama High School and received the B.S. Degree from Nicholls State College in 1964 with a major in physical education and a minor in social studies.

After graduation from college, he coached and taught for four years in Louisiana high schools. Two years at Thibodaux High School in Thibodaux, Louisiana, and two years at Ascension Catholic High School in Donaldsonville, Louisiana. He was a full time student at Louisiana State University in 1968-69, 1969-70. The past two years have been spent in teaching and research at the Children's Center, an institute for exceptional children in Montgomery, Alabama.

The investigator is married to Charlscia Pate Elrod and they have one daughter, Katherine DeLise, six years of age.

EXAMINATION AND THESIS REPORT

Candidate: Joe Marlan Elrod

Major Field: Physical Education

Title of Thesis: The Effects of Perceptual-Motor Training and Music on Perceptual-Motor Development and Behavior of Educable Mentally Retarded Children

Approved:

Helen S. Faust
Major Professor and Chairman

Max Goodrich
Dean of the Graduate School

EXAMINING COMMITTEE:

James L. Mulhollan

T. A. Drury

Jack K. Nelson

Mary L. Life

Date of Examination:

May 10, 1972